

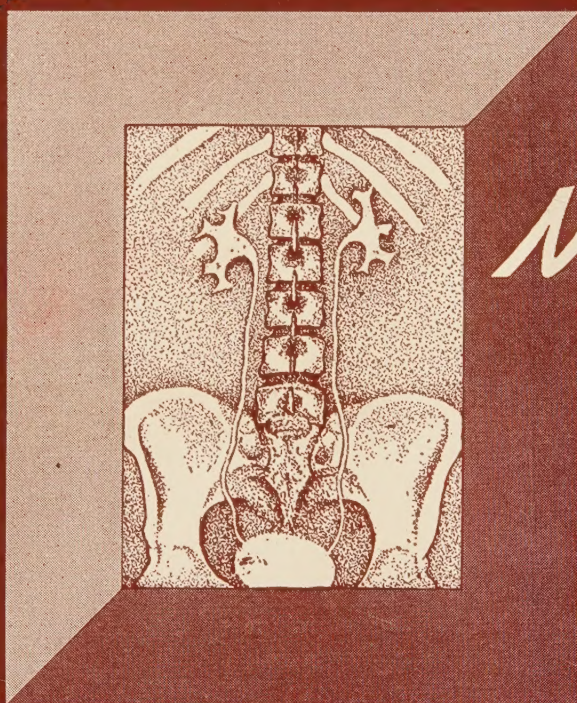
MEDICAL RECORD



March 1944

Vol. 157, No. 3

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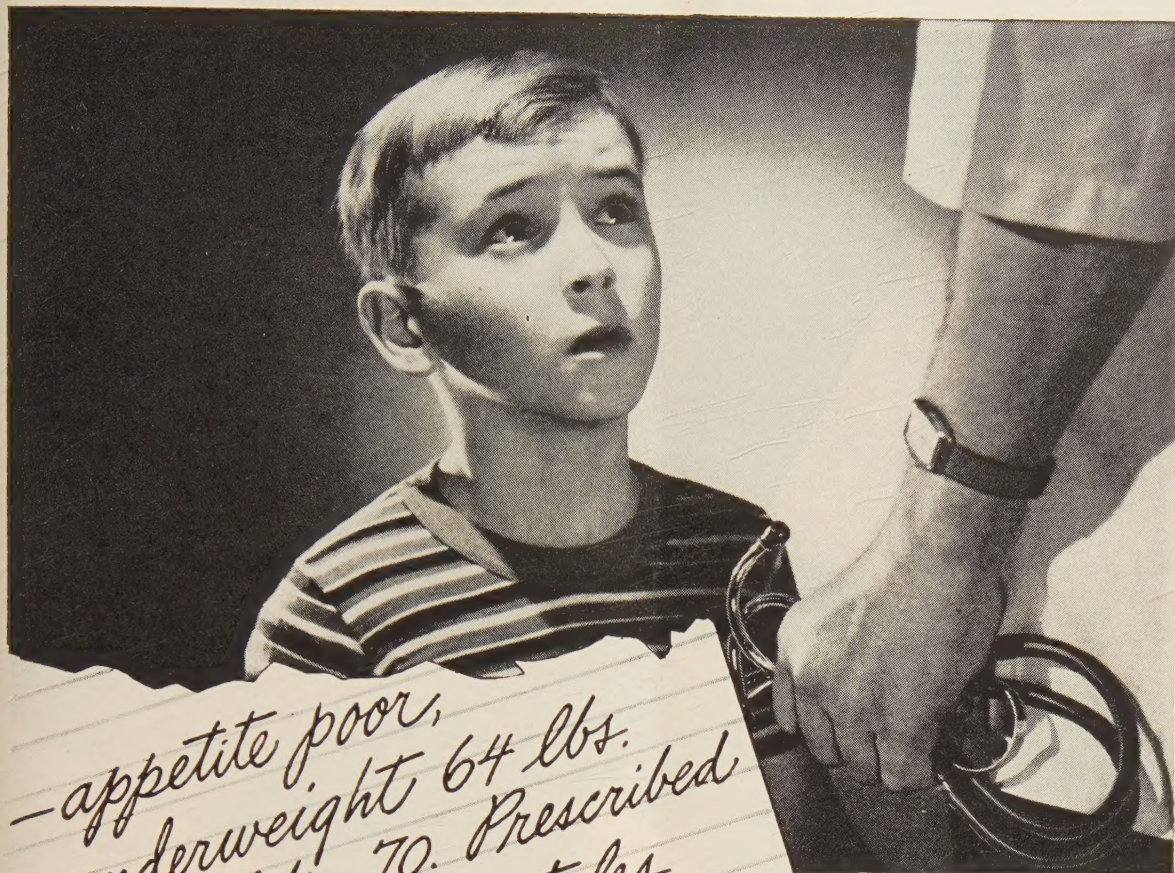


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THE MEDICAL JOURNAL AND RECORD PUBLISHING CO., INC.

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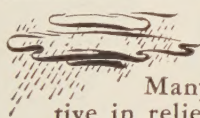
John Bell

John Bell of Edinburgh (1763-1820), founder of surgical anatomy, elder brother of Sir Charles Bell and teacher of many brilliant American and Canadian surgeons, has never received the praise which was his just due. Anatomy up to 1786, in Edinburgh and elsewhere, was taught as a formal, systematic subject. John Bell attempted to alter this mode of teaching for a more practical method. He argued that the old system, which was used by the anatomists up to his time, was of little real use to the student because, as he said in 1810, "In Dr. Monro's class except there be a fortunate succession of bloody murders, not three subjects are dissected in the year. On the remains of a subject fished up from the bottom of a tub of spirits are demonstrated those delicate nerves which are to be divided or avoided in our operations; and these are demonstrated at the distance of one hundred feet! Nerves and arteries which the surgeon has to dissect, at the peril of his patient's life". This quotation is from John Bell's *Letters on the Education of a Surgeon*, p. 579, 1840.

John Bell was so successful as a lecturer that in 1790 he built an anatomical school and attracted patients in large numbers. Among his pupils was Ephraim McDowell and, according to Garrison's *History of Medicine*, through Bell's eloquent teaching, was early impressed with the sad and hopeless fate of women afflicted with ovarian disease. Bell was an all round man; in addition to being a deft anatomist, he was a good scholar, a skillful draughtsman and etcher, a ready speaker and wrote in well chosen and terse English. The engravings of John Bell are significant mainly on

account of their usefulness to the operating surgeon. As a matter of fact, he taught anatomy in a far more practical way than the university professors of Edinburgh, and thus roused the ire, not to say venom, of the ruling medical clique, and Bell was attacked with audacity and malignity. Dr. James Gregory, professor of the practice of medicine in the university, to his lasting shame led the attack and vilified Bell with personal abuse. Bell, himself, who had a pretty wit backed by satiric humor, replied to this abuse pungently and effectively, but ceased to lecture in 1799, confining himself to his surgical practice, and was for many years the leading operator and consultant in Scotland.

John Bell, in addition to being a great surgeon, in many respects in advance of his time, was a highly cultured man, travelled, not provincial, and polished. He was less of a pioneer than his brother; he did not have the opportunities. Also, he was first and last a surgeon, and wrote but little. He was a superb artist and engraver. The drawings and etchings in *Engravings, of the Bones, Muscles and Joints*, 1794, were done by himself. The brothers Bell may be compared in several respects to two other great Scotch pathfinders in medicine and surgery, William and John Hunter. John trained Charles Bell in anatomy and surgery and assisted his brother when a boy. Both possessed a genius for anatomical drawing and both were fine surgeons, John, perhaps, especially so. John Bell has not received the posthumous fame which is owing to him. He was a great man from every point of view and a dour fighter. His *Letters on the Education of a Surgeon*, 1840, are full to the brim of valuable hints drawn from a storehouse of experience enlightened by genius.



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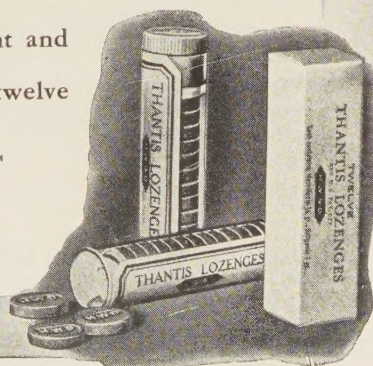
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Open Forum

Unhealthy Legislation

To the Editor:—

One of the most important things to be done in 1944 is to make sure that the Congress buries the Wagner-Murray bill so deeply that no one will ever have the courage to exhume it. In case you've forgotten, this bill is the one that proposes to make the Surgeon General of the Public Health Service, absolute dictator over the doctors and hospitals of the United States.

Newspaper editors from coast to coast have commented unfavorably on this abortive, socialistic legislative proposal, which would disrupt the greatest medical system in the world, to have us copy experiments of nations which do not come anywhere near to matching ours in medical progress. The Dayton (Ohio) Press says:

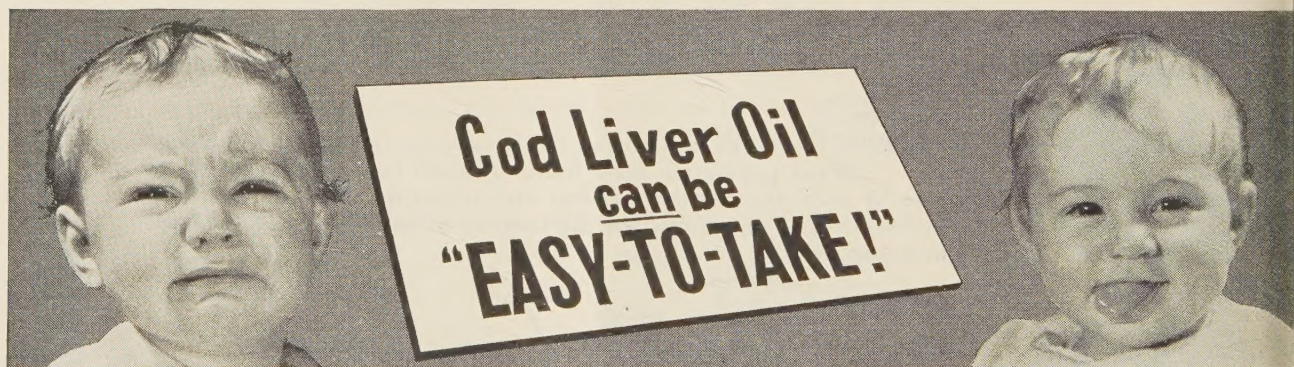
"If ever a bill was designed to subjugate completely the people of the United States and wrest from them the few liberties remaining after eleven years of New Deal bureaucracy, that bill is Senate Bill 1161, introduced by Senator Wagner of New York to provide \$3,048,000,000 annually for government medical care, in other words, the socialization of medicine... If Bill 1161 should become a law it would be the last step to complete dictatorship. Health is our greatest asset; when the politicians start playing with the health of a nation, that nation has lost freedom completely and has permitted itself to become the pawn of ambitious

men who would make them the slaves of such a super-state as the world has never seen."

The *Page News and Courier*, of Luray, Virginia, comments as follows: "One phase of the Wagner-Murray Bill now before Congress, to broaden the Social Security Act, of which not too much is said by its supporters, is the cost of the proposal. The old fallacy has been encouraged that a magnanimous government stands ready to 'give' something to the people once the measure is passed. Provisions for medical and hospital care contained in the bill are heavily stressed with the inference that they too will be free.

"Such high-pressure sales tactics are fraudulent. The government will never give anything away because it can give nothing until it first takes it from the people. If the Wagner bill is made into law, the government will immediately begin to collect additional billions of dollars in taxes to pay for the 'benefits' it will later hand out. As a doctor recently told a patient: 'If you earn \$200 a month, your (social security) bill will be \$12.00 a month, six times more than is now taken out of your pay check—or \$144 a year. Your employer will pay a like amount, which means that bread, your car, your refrigerator, and everything else you buy would have more hidden taxes wrapped up in it.'"

The *Enterprise*, of Ephraim, Utah, adds its protest: "The government itself has presented one of the strongest arguments against the ultimate socialization of medical care. Efficient, prompt and competent treatment is the cardinal requisite of a successful medical system. Everett W. Jones, head hospital consultant of the War Production Board, in opposing compulsory hospital insurance under government management



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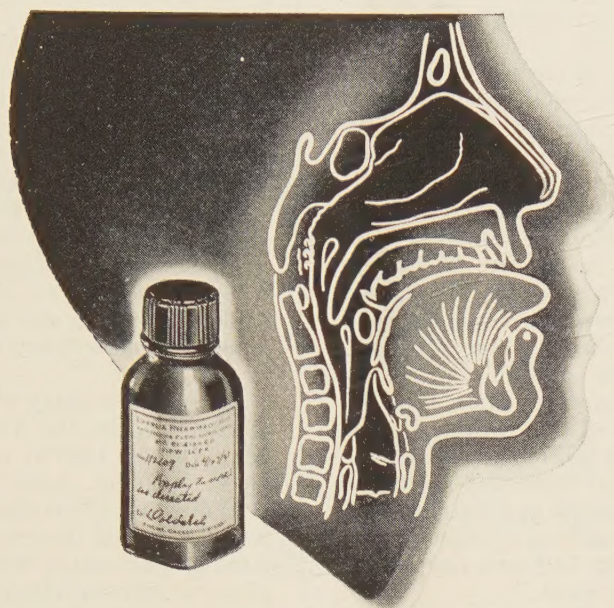
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comments that: 'Federal agencies cannot hope to approach private initiative and enterprise in efficient management.' After working fifteen months in Washington, he says: 'I have no delusions left as to the efficiency of governmental agencies. Delay and red tape just can't be eliminated in any political organization as gigantic as our Federal government. The record speaks for itself.'

"Shifting the responsibility of medical care to government would not simplify the health problems of the individual. It would add to them by the destruction of medical efficiency and further pyramiding of bureaucracy."

The *Union County Herald*, of Elk Point, South Dakota, sees a serious threat to the American Way in the Wagner-Murray Bill. It has this to say: "This man, the ordinary citizen, does not begrudge in the slightest, the money given to the government from his check for taxes and bonds to fight the war. But when some bureaucrat now proposes 'free' medical care, or free this or free that, under a greater paternalistic bureaucracy, he becomes more than skeptical. He sees red. He knows that every such scheme means more deductions from his dwindling pay check and less chance for him to shape his future on his own initiative. His money, together with that of millions of other citizens, is keeping the bureaucrat going. And some day, the bureaucrat is destined to feel his wrath."

The foregoing comments are but a few of hundreds of similar expressions. It would seem that the American people generally, who have examined the Wagner-Murray Bill, consider it *bad medicine—unhealthy legislation*.

GEORGE PECK

1944 Red Cross War Fund

When bombs fall there is no time to send help half way around the world. When a badly wounded fighting man needs a transfusion, it is too late to begin looking for a blood donor or find a nurse to care for him. Where a lonely soldier learns of trouble at home, he needs help—immediately.

The American Red Cross provides that help wherever and whenever the need arises. A continuous procession of blood donors must be maintained, nurses must be recruited for the Army and Navy, trained Red Cross workers and supplies must be sent to camps, hospitals and foreign theaters of operation the world over.

When a train crash leaves scores injured, when flood engulfs a town, when epidemic strikes, delay may cost lives. Red Cross disaster relief and medical supplies, held in readiness for such emergencies, plus trained workers to rescue and assist victims and help in their rehabilitation, will prevent delay and thus save many lives.

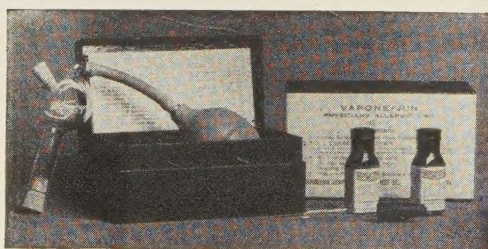
To fulfill its many obligations to the armed forces and our people, the American Red Cross needs your help. During 1944 it must supply some five million blood donations. Each month two thousand five hundred nurses must be recruited for the Army and Navy. Red Cross field directors and other trained personnel must be stationed at military and naval posts and hospitals to help our fighting men and their families when personal trouble brews, a task in which the Red Cross chapter on the home front ably does its share.

At home the Red Cross must continue to maintain a state of alert. Disasters must be met as they occur. Nurse's aides and first aiders must be trained and other

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educational projects continued. Food parcels for distribution to prisoners of war must be packed, surgical dressings made and the thousand and one details of administering a far-flung, busy organization must be attended.

All activities of the American Red Cross are financed by voluntary gifts and contributions. During March, designated by President Roosevelt as Red Cross Month, the American Red Cross must raise its 1944 War Fund of unprecedented size to meet unprecedented needs. Your contribution will assure maintenance of all Red Cross services and thus indirectly help save many a life. Let's give!

Tuberculosis Still a Real Problem

Tuberculosis has been present for so long and people are so accustomed to it, that the interest of the public and of many public health workers is in danger of being sidetracked to more glamorous and exciting problems, says the *American Journal of Public Health*, July, 1943. This is a serious deterrent to accomplishment in this field. Further, the decline in tuberculosis, both in morbidity and mortality, in the past forty years, may lead some to think that the problem is one of the past. Let there be no mistake in this direction, the writer continues; tuberculosis is still a real problem. If, instead of comparing the tuberculosis rate of today with what it was fifty years ago, one will compare the tuberculosis prevalence and mortality of today with today's prevalence and mortality of other diseases, the present seriousness of the tuberculosis problem can be appreciated. In the most productive period of life, tuberculosis continues to cause more deaths than any other one disease.

Venereal Disease Public Educational Program and the Public Health Agencies*

HERMAN GOODMAN
New York, N. Y.

(Continued from page 76)

The public health agency provides the central registry of patients, based on the notification of positive laboratory evidence; reports of patients under treatment; information on persons exposed to infection; those from whom the disease was acquired, and those to whom it may have been transmitted. The central registry includes the results of follow-up procedures. On the basis of the central registry of patients the official authority knows the number of persons infected and where they are under treatment, and thus can determine the rise and fall of rates of new infection. Statistics of the age group, sex, and marital status of the persons infected can also be learned from a study of the central registry.

The official health agency has an official symbol in answering the appeal of the government for the dissemination of information on venereal disease—syphilis and gonorrhea. A suggested symbol would be based on an outline map of the United States. In the region above its northern border would be placed a directive "Help Keep U. S. Strong and Free". The message over the map of the United States would be "Prevent Venereal Diseases, Syphilis and Gonorrhea" together with the two letters V. D.

*Prepared at the request of and in cooperation with Murray Bräse Associates, Advertising Counsel.

The opinions expressed herein are those of the author and it is to be understood he does not presume to give the official views of any branch of the federal, state or city governments.

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The mode of approach to the public would be through the radio, by spot announcements, feature programs of fifteen or thirty minutes, quiz hours, round table discussions, and messages from radio commentators. Transcriptions should also be utilized. English and foreign languages must be utilized over the radio morning, noon and night. Non-paid press communications must be utilized. These include comics, sporting page announcements, notices in women's columns, health columns and gossip columns. Paid display advertising must be a prominent feature of the appeal to the public. English and foreign language newspapers must be utilized. Other media are posters, twenty-four-sheet and three-sheet billboards, three-dimensional exhibits, window displays, counter displays, car cards, match box covers, stickers for envelopes, letters, packages, auto windshields, and windows. Films, silent and talkie, 35 mm. and 16 mm. as trailers, as educational shots and also as a mode of transferring messages to the audience from important persons of national and local fame. The cartoon movie system will furnish a marvelous medium for the transfer of information on the prevention of venereal diseases, syphilis and gonorrhea, suitable for general audiences. A special film should be produced for professional audiences, social workers. Still other films should be directed toward the infected five percent stressing the importance of continuation of treatment until cure is determined. Strip film technique with accompanying narration provides a relatively simple and inexpensive form of approach to specialized groups, particularly in schools.

Direct-by-mail posters as envelope stuffers, blotters,

broad-sides, booklets, reprints, advertisements, inspired articles for house organs and employee magazines, all provide additional adequate approach to the public.

The present effort directed toward the prevention of the venereal diseases—syphilis and gonorrhea—would be a "cinch" if vaccines, antitoxins and serums were available to protect all the people. Unfortunately, there is no method now known of providing protection of the healthy by injections or vaccinations against syphilis and gonorrhea. The public should be informed of the truism: You help yourself by keeping the public healthy.

The official public health agency as a sponsor of the government-inspired public education of prevention of venereal diseases, must recognize the difference between a campaign and an effort. This is *not* a campaign because a campaign has a beginning and has an end. All campaigns end. The nature of approach to a campaign with a beginning and an end would *ipso facto* destroy the value of the contemplated effort.

It is an effort because it proceeds from January to December over many years. The present effort must avoid becoming a "scare" job; must avoid becoming a "shame" job. Ninety-five percent of the audience have nothing to be afraid of, nothing to be ashamed of. The five percent of diseased persons can neither be scared nor shamed. Syphilis and gonorrhea are diseases. In some measure, the venereal diseases may be regarded as accidents, and receive the same consideration as industrial or automobile accidents.

The effort projected for the official public health agency as a sponsor for the government's directive to

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the people for the preservation of health, for the prevention of certain infectious diseases—the venereal diseases, syphilis and gonorrhea—offers an opportunity for the alignment of persons of prestige. There can be no hesitancy on the part of the President of the United States, the Prelate of the local Catholic Church, the principals of the neighborhood high schools, the proprietor of any newspaper, moving picture theatre or other establishment to join in the effort.

Systems of Health Protection

At the Health Council Wartime Conference on Labor Health Security, held recently in New York, it was decided that the country should be organized into units to provide proper health care that will adequately benefit the people. A system of health protection for the American people, to be effective, must be adapted to American conditions, therefore units of operations should be set up in both rural and industrial areas. The basic concept of this type of unit care would provide a group of physicians, dentists, optometrists, podiatrists, nurses, and all other licensed workers in the health field in proportion to the size of the community and the number of persons in the unit. These units should be set up by a national system based upon the seven-point program of the Health Council. These points are: a central policy forming body; a salaried, full-time or part-time pensionable personnel; social security for professionals; a tax maintained health security system; government subsidies for students in health field, and for educational institutions and research; special emphasis on maternity and child care.

Foreign Systems

China.—Dr. David S. K. Dai, in discussing the Chinese health unit, said that the hsien (district) services are an integral part of the government. The provincial health administration has a supervisory function, he continued, including the training of personnel provisions of hospitals and research facilities. Over all is the National Health Administration which supervises and coordinates the provincial health administration. They also undertake the higher training of personnel and the necessary research work which enables the national health programs to be planned.

Russia.—Professor V. V. Lebedenko said that in Russia it was believed that each person was entitled to free health care as a citizen's right, and this was given under the supervision of the Commissar of Health who is a member of the Federal Cabinet, the highest executive and administrative body of the Soviet Union. Periodic health examinations, he said, were compulsory by law and in the more hazardous industries workers undergo health examinations two or three times a year.

Britain.—Dr. George F. McCleary said the British had three systems of public health services: 1. A public health service which included hospitals for mental and infectious diseases; tuberculosis hospitals, sanatoria and dispensaries, treatment of venereal diseases, medical inspection and treatment of children attending public elementary schools, and an extensive range of maternity and child welfare services; 2. domiciliary and institutional medical care of indigent persons; 3. National Health Insurance. All of these systems work toward health protection for the people.

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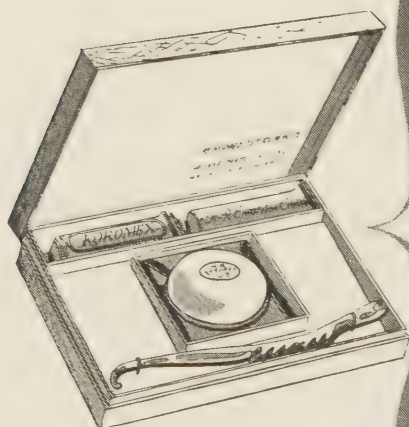
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Our Contributors

ARTHUR A. LANDSMAN, M.D., Ph.G., New York, N. Y., was graduated from Columbia University College of Pharmacy in 1896, and from Cornell University Medical College in 1900. He was formerly associate in rectal diseases at the Post Graduate Hospital; deputy surgeon in the out-patient department of the New York Hospital, in charge of the rectal clinic; instructor in surgery in extension courses at Columbia University, and attending proctologist at Sea View Hospital, New York. He has done postgraduate work in Berlin and Budapest. At present, he is attending proctologist at Jewish Memorial Hospital, New York. His special medical interest is tuberculous fistulas about the rectum, and his hobby is the collection of old books on proctology.

* * *

JOSEPH SHANKS, M.D., Chicago, Ill., is a specialist in diseases of the eye, ear, nose and throat. He was graduated from the Chicago College of Medicine and Surgery in 1910 and served an internship of one year at the German American Hospital. He did postgraduate work in eye, ear, nose and throat diseases in Chicago clinics from 1921 to 1925. For four years he served on the staff of the Illinois Eye and Ear Infirmary as assistant eye surgeon, and afterwards as adjunct ear, nose and throat surgeon to the same institution. He was formerly chief eye, ear, nose and throat surgeon at the Chicago Hospital and other institutions. At present he is chief eye, ear, nose and throat surgeon at the North Chicago Hospital. His hobbies are literature, music, and French.

FLOYD E. HARDING, B.A., B.S., M.D., Los Angeles, Calif., obtained his B.A. degree from the University of Iowa in 1925; his B.S. and M.D. degrees from Loyola University, Chicago, in 1926 and 1929, respectively. He interned at the Los Angeles County General Hospital and was resident for one year at the same institution. He has been a member of the Ross-Loos Medical Group for the past twelve years, specializing in endocrinology. He is a member of the New York Academy of Sciences and the Association for the Study of Internal Secretions. His hobby is photography.

* * *

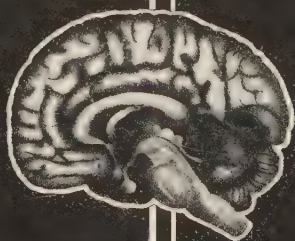
D. B. MCCARTIE, M.D., Newark, N. J., was graduated from University and Bellevue Hospital Medical College in 1901. He is engaged in private practice.

* * *

J. CHRISTOPHER O'DAY, M.D., Honolulu, Hawaii, formerly held the chair of surgical pathology and anatomy at the North Pacific College in Portland, Ore. In connection with his work at the University of Oregon Medical School, Dr. O'Day distinguished himself in a series of experiments that demonstrated the relation of thyroid activity to diabetes.

* * *

ROBERT BOYD, M.D., Brooklyn, N. Y., was graduated from the College of Physicians and Surgeons, Columbia University, in 1891, and served an internship at the Astor Memorial Hospital. For four years he served as an officer in the U.S. Navy and resigned to engage in private practice. He practiced medicine for twelve years in Puerto Rico, and for the past sixteen years has been in general practice in Brooklyn. His hobbies are ornithology, story writing, rifle practice, sailing and music.



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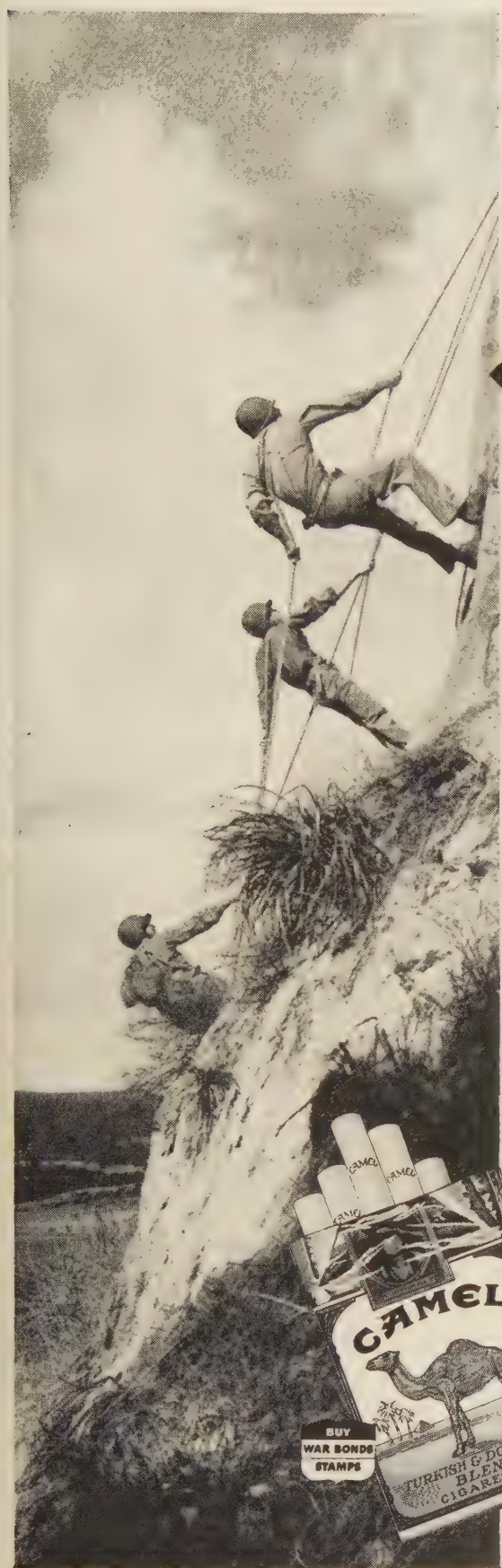
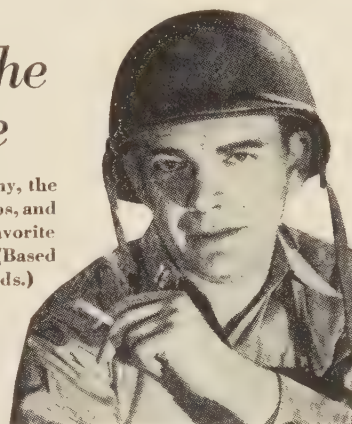
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New reprint available on cigarette research — Archives of Otolaryngology, March, 1943, pp. 404-410. Camel Cigarettes, Medical Relations Division, One Pershing Square, New York 17, N. Y.

Benjamin Franklin's Contributions to Medical Science

By profession, Benjamin Franklin was a printer and publisher. Much is known of him as Franklin, the statesman, the inventor, the engineer, the agriculturalist, the oceanographer, the meteorologist, the botanist, the physicist and a host of other talents. But one of the least known facets of Franklin's multi-sided nature is that of the medical scientist. Yet his contributions to the field of medicine were important and one of his chief interests was the study and cure of disease.

Although he had no formal medical education or M.D. title, his research on the common cold, lead poisoning and other ailments, was outstanding. Some of his contributions to medical literature, such as his letters to Dr. Cadwallader Evans and Benjamin Vaughan, upon the cause of colica pictonum and his numerous papers on catarrhs and contagious colds, have become classical.

Smallpox.—In the course of his association with prominent medical men of his time, Franklin spoke with William Heberden, distinguished London doctor, about the practice of inoculation against smallpox. He persuaded Heberden to write, in the midst of many interruptions, a pamphlet entitled "Some Account of the Success of Inoculation for the Small Pox in England and America, Together with Plain Instructions by Which any Person May be Enabled to Perform the Operation and Conduct the Patient through the Distemper (1759)". Heberden had this pamphlet printed at his own expense and, to the eight pages of the brochure, Franklin added a four page preface in which he declared there was no longer any doubt as to the value of inoculation. It was in the hope of teaching poor parents how to inoculate their own children that Franklin sent fifteen hundred copies to Philadelphia to be given away gratis.

In Europe, Franklin's good medical sense was so respected that Dr. Jan Ingenhousz, court physician to Maria Theresa and Joseph II, sought his advice before inoculating the young princes of the imperial family.

Mesmerism.—One of Franklin's sagest observations on the subject of medicine was that "Quacks are the greatest liars in the world—except their patients". Accordingly, he was instrumental in debunking the "animal magnetism" therapy practiced by Friedrich Mesmer.

Early in 1784, Mesmer's cult was a tremendous fad in Paris, numbering Lafayette and nobles of high rank in his following. Franklin, as a member of the Royal Medical Society of Paris, was appointed by King Louis XVI to serve on a commission examining Mesmer's doctrines and experiments. It was largely through the sagacity of Franklin's report that the charlatan's hocus-pocus was exposed and Mesmer was forced to discontinue his practice.

Optometry.—The world is indebted to Franklin for the invention of bifocal lenses. It was in 1784, while Franklin was ambassador to France, that he developed this important optometric discovery. The seventy-eight-year-old sage always wore glasses and he could not, without them, "distinguish a letter even of large print". But the story is best told in his own words:

"Before that year I had used two pair of spectacles which I shifted occasionally, as in travelling I sometimes read and often wanted to regard the scenery. Finding this change troublesome and not always suffi-

ciently ready, I had the glasses cut and half of each kind (of lens) associated in the same circle."

Thus one pair of glasses automatically corrected near and far sightedness.

Lead poisoning.—Franklin was a pioneer in the diagnosis of this disease. His letters on the subject are classics in literature. To Cadwallader Evans, in 1768, Franklin wrote that he had long believed lead poisoning to be due "to a metallic cause only; observing that it affects, among tradesmen, those that use lead, however different their trades: as glaziers, letter founders, plumbers, potters, white-lead makers and painters."

Drawing on his own background as a printer, Franklin expressed in another letter the belief that lead poisoning among typesetters was due to the particles of metal swallowed with their food by slovenly workers who ate their meals without washing their hands.

Colds.—Franklin's theories on the causes and cures for the common cold are essentially the sum total of what anyone today knows about that commonplace and most widespread of diseases. Even though he could never have heard of germs or virus, Franklin deduced that colds were carried by "particular effluvia in the air". He also believed that colds were contagious.

His theory maintained that colds were spread by crowds gathered in unventilated quarters and breathing foul, stagnant air. His theories on air conditioning were developed as a corollary to this observation.

In illustrating how colds may be prevented, Franklin advised frequent bathing (in an era when baths were regarded as unwholesome), regular physical exercise, sound diet and fresh air. No modern physician could give sounder advice.

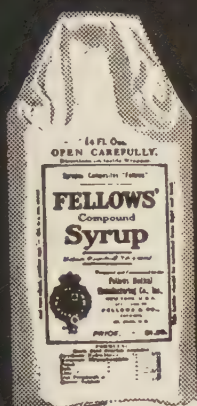
Not only was Franklin preoccupied with the cause and prevention of the common cold, but he dabbled in pharmacy to devise a treatment for it. When Samuel Johnson was stricken with "the fever and ague", Franklin advised him, in a letter dated September 13, 1750, not to "omit the use of bark too soon". He also added, "Remember to take preventing doses faithfully . . . If you take the powder mixed quick in a tea cup of milk, 'tis not disagreeable, but looks and even tastes like chocolate. 'Tis an old saying: That an ounce of prevention is worth a pound of cure—and certainly a true one, with regard to the bark."

Heart action.—In 1745 Franklin wrote at length to Cadwallader Colden on the dilatation of the ventricles of the heart and the cure of the yaws. A treatise of uncertain date, called "A Conjecture as to the Cause of the Heat of the Blood in Health and of the Cold and Hot Fits of Some Fevers" was found in Franklin's handwriting among the papers of Mr. Colden.

Medical instruments.—Franklin also used his inventive genius in the field of medicine. His brother, John, wrote him of his need of a flexible catheter, and in December, 1752, Franklin devised the first flexible catheter known to American medical history. Franklin wrote about it to his brother as follows:

"I went immediately to the silversmith's and gave directions for making one (sitting by till it was finished that it might be ready for this post)."

Paralysis.—In response to the request of John Pringle, president of the Royal Society of Medicine, Franklin wrote an account of the beneficial effects of electricity in paralytic cases, which he had observed through experiments he himself conducted on paralytic victims. Franklin's report was conservative.



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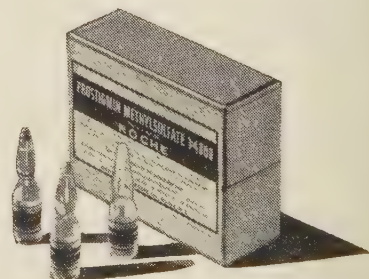




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MARCH 1944

WHOLE No. 2734

THE RETROCECAL APPENDIX.

J. CHRISTOPHER O'DAY

Honolulu, Hawaii

In dealing with the retrocecal appendix I am reminded of those vainglorious days when in shooting at abdominal abnormalities, real and imaginary, too often did we shoot over the mark while pretending we had scored a hit. We were not inclined toward pedantry, but having been regimented we recognized the erudition that goes with regimentation, and found it by adopting such words and phrases as would be beyond the reach of our commonplace scholars. But this was not all. I think of it now as a game of blind-man's buff, or where one wanted a corner all his own somewhere within the walls of the abdomen where this erudition could be given expression without any interference from the profession's common herd.

From out these coveted corners came such phrases as visceroptosis, viscerostasis, gastroptosis, cecal dyscrasias, and cecum mobile. A fine display of enteric shadow boxing! Had we gone no further than this, contrition would have come easier to us, but each of us, believing corners had been won, listened to what was proposed for the correction of these treacherous viscerodyscrasias that seemed bent on torturing their victims on and on till despair entrenched itself in every phase of life. When quiet and calm moods suggested caution and deliberation, it was an admission that within his corner all had not been going well. No dispute relative to the correctness of diagnosis had ever arisen. Indeed, diagnoses were verified by the radiologists who often concurrently pointed out kinks that we had not suspected.

As scientists, however, we knew the inevitability of change, for it was evident to us that things within the abdominal walls were, like a bearish market or London Bridge, falling down. The kinks could not be gainsaid, for there they were in bold x ray relief, despite the fact that below them there was barium aplenty. Plication became the word of the hour. We plicated the gastrohepatic and the falciform ligaments until short enough to hold the stomach where we believed it should be. We put tucks enough into the great omentum to give it the office of a hammock in which the stomach was to rest at ease. If the transverse colon had taken on the sag of a suspension bridge, we plicated the gastrocolic ligament. If, peradventure, such plication was not feasible, an ileosigmoidostomy might be substituted.

But as time went on, and disappointments began to torment us, the accusation was made that our imbecetus in all this reflected the fellows who sold us our

cars, for did not they too, have an erudite vocabulary by which they sold, not cars, but streamlines, cushioned seats, swaying springs, balloon tires and low gas mileage? In a word, comfort! In this the auto-salesman had us beat from the start. Comfort is not a perpetuity. The truth of this goes for a car as much as for the human machine, but the auto has the means of escape through a change in the model—a change he is prudent enough to make once a year. Our model was limited to but one change; after that, remorse without end.

At last, overtaken by life's inevitable realities, conscious stricken, our hands became palsied. Our inefable results, perhaps were the key that unlocked our conscience. And how could it be otherwise, when ptosis, stasis or kinks were, in none of the cases, associated with the slightest degree of ileus. Our erudite vocabulary had to go, as had others of the artist's dreams, to the junk pile of the battered arts. Never again were we to speak glibly of visceroptosis; of viscerostasis or gastroptosis. Never again were we to plicate the enteric ligaments, or to plaster the falciform ligament to the lower third of a drooping greater curvature. Never again were we to speak of the comforts that ensued after an ileosigmoidostomy.

Anthropologists tell us that whenever human progress gets too far ahead of the herd it has to stop, turn back, and rejoin the herd. It happened likewise to us. We had gone too far, and, like the others, torch in hand, returned. With the common herd again, we began to see and to understand that one cannot hold fame by personal effort alone. Humility knoweth the rod of chastisement. With graciousness we bowed and took it in silence. There was one redeeming feature to it all; we had no mortality rate. But despite this there were ghosts; ghosts of plicated ligaments; ghosts of great omentums twisted and plicated into hammocks; ghosts of all that stitching—all that erudite vocabulary, all that promising of ease and comfort, once the streamlining was accomplished.

Oh promise me! And what you may promise may be looked for even though its fulfilment may remain as a cloud with the sun behind it. But there were a few of our victims who did get to see the sun; so many corrections were made within their abdomens we were at a loss to know which one of them had made the rift that let the sunlight in. To determine this we reviewed the records. Imagine our wonderment when we discovered that the recoveries, to the last one, occurred in

such of our cases that were associated with mobile cecums and retrocecal appendices. As classical surgeons we had been ignoring the appendices. The common doctors and operators had been lavishing too much attention on that worm of a thing for us, the profession's annointed, to mess with. But now, with the records before us, came another bitter pill. The common herd had more cures to their credit, and obtained by the simple expedient of removing a retrocecal appendix.

Who of us will forget the pocket from Canada? That artistic little pocket made into the posterior parietal peritoneum. What an ingenuous receptacle it was. And what was it to hold? Why it was to hold, and hold securely, a recalcitrant cecum mobile. It seemed reasonable to assume that any caput coli would abuse such freedom. What was to prevent it from filling to where the weight of the fill imposed a drag on the entire length of the ascending colon, thereby giving rise to one of our composites of ptosis and stasis. And what better correction had we than that Canadian pocket? It, the pocket, would take the drag from the ascending colon and transfer it to the posterior parietal peritoneum. But a short, narrow mesoappendix, plus a retrocecal position, made an appendectomy imperative in order to tuck with neatness the caput coli into the newly constructed pocket.

Here was another bitter pill in the waiting. Again were we to be made ashamed. Hospital records revealed that those confrères of whom we believed ourselves surgically superior, had more cures to their credit by a policy that ignored streamlines but concentrated on the appendiceal region. From that region alone came the benign bellyaches. That mischievous bellyaching that was not where felt, as is the way of a pain that is reflected, yet a pain nevertheless, and usually in the disguise of a pain that might emanate from a peptic ulcer. But the boys of the common herd knew their appendices and their cecums, but above all else they knew their retrocecal appendices with the acute upward turn that hindered the drainage of their normal secretion, thus creating an intra-appendiceal pressure that betrayed itself by a sort of undulating bellyache.

Through this came the rift that let in the light. How strange it seemed that we, the classical surgeons who had been smug in our frowning on our confrères and appendices alike, should, of a sudden, be made to feel the check-rein of caution. "Stop, look and listen". Then in the stopping, looking and listening to see our temple reduced to rubble by those we had been frowning upon as our surgical inferiors. One stop, one look and one listen and we knew that the days of rehabilitating the streamlines of enteric art was, and for all time, at an end.

Deaf ears to the admonishment of our anthropologists had brought us back to the herd. If success was to be the crowning glory of our skill we would have to forget the art of streamlining and think more about cecum mobiles and retrocecal appendices. The vermiform appendix is endowed with individuality, temperament and characteristics. Like their owners, no two of them alike. Of them all the retrocecal variety is the more vicious, annoying and misleading. With the pain in the epigastrium suggesting peptic ulcer, it was not unreasonable to subject that region to an x ray ex-

amination, and this, too often, without due consideration of gastric motility. Enough that the stomach was lower than what our preconception of its place should be. Then to raise it and fix it where we believed or imagined it should be became what may well be described as an obsession. By the time we had plicated the gastrohepatic ligament and anchored the stomach to the broad surface of the falciform ligament, the cecum mobile, with or without its hiding appendix was forgotten.

But when the cecum was not overlooked, and a retrocecal appendix was removed in addition to the streamlining, recovery always followed. That was the reason the common surgeon outdid us in results, for he had not the artistic temperament, therefore he would have none of the streamlining on his conscience. He knew his appendices with all their peculiarities, and attacked them directly as soon as he was certain enough of the bellyache being reflected from it. But we were not alone in this orgy of streamline enthusiasm. A silent part was played by our anatomical artists, a part that exonerates them from any censorship. Their illustrations were so good, artistic and lucid that, for a time, we believed ourselves to be the vanguard of belly surgery.

When and When Not to Operate

Speaking of operations seldom fails to exclude mention of the appendix. Many who have been appendectomized will tell you it is a minor operation. One week in the hospital and home again all healed and as good as new. Others will have a different opinion. They were weeks in the hospital and had to have one or more additional operations before home again—even then very weak. Then there will be those who laugh at this. They were months in the hospital. Their operation was followed by an abscess that drained and drained from month to month until they were able to leave and go home. Then, just as they were being told of it, a new pain and swelling were followed by a fecal fistula. Then there were those who did not go home. Death had decreed otherwise.

I have these many years been a strong believer in what the late John B. Murphy stressed as, *the seeming intelligence of the peritoneum*. The plastic exudate that it throws around the infected appendix; the wall it erects between that focus and the general peritoneal cavity; the millions of leucocytes that are placed as sentries around that wall with orders to permit no coming out from within that stockade of living tissue; the way pyogenesis with its resultant abscess is prepared for, and the willingness of the leucocytes to metamorphose into phagocytes, all these and still others, are but the silent manifestation of this seeming intelligence. "It is an intelligence," he often remarked, "far superior to the intelligence of those who might destroy it during an ardent delusiveness of a perverted self-sufficiency."

When not to operate is more imperative than when to operate when confronted with appendicitis. Between the seventh and twenty-fourth hour of the illness, there are delicate things to consider, and unless one has been given experience enough to recognize them, the safer plan will be to defer operating. But if twenty-four hours have passed, it may, without risk, be taken for granted that the walls have been completed

and there must be no surgery lest they be torn down. Here is where the intelligence of the peritoneum should be listened to. Once we have this twenty-four hour assurance of completed walls around the infected appendix, we need not worry, for we know that the attack under consideration is going to end within those walls, either in resolution or abscess formation. If the latter, drainage through the dome of the inclosure, then later, when the fire is all out, the so-called intermediate operation may, with safety, be performed.

The usual appendiceal abscess is not only well fenced in, but its walls are well roofed by the anterior parietal peritoneum. That is why the apex of the bulge is the proper site through which to establish drainage and with no fear of getting into the general peritoneal cavity. But this should never be taken for granted lest it may be a retrocecal appendix we are dealing with. When this variety of the vermiform appendix becomes pyogenically infected, a much lesser wall is needed to wall it in. Above and to either side it is covered by the caput coli and the cecum. It lies on the posterior parietal peritoneum. To open such an abscess through the usual anterior incision is a most dangerous procedure. This is where the Parker incision comes into its own. It is made along the crest of the ilium, then on reaching the iliatus, the retrocecal abscess is easily reached by a long curved clamp.

The *locus minoris resistentiæ* of a retrocecal abscess is the posterior parietal peritoneum upon which it rests. When this barrier is forced to give way, a flood of infectious debris enters the loose, fatty cellular tissues of the retroperitoneal space from where a septicopyemia may readily be brought on. We need no coaching to understand why these retrocecal-appendiceal abscesses increase their mortality rate once access to the retroperitoneal space has been gained; this, however, is too well and too generally understood to be dwelt on. But there is a sequela to such abscesses that presents something to puzzle over and, the puzzling may be minimized if the clinical history has been carefully elicited.

What is this sequela? What does it do to its victim? How is it to be recognized? First, we get a history that is indicative of an attack of appendicitis; secondly, there was no operation for its relief; thirdly, there

was a long fight against *blood poisoning*, ultimately, recovery. Then a year or so passes and the right side of the back begins to ache. At first the pain is mild, but it grows more and more severe. Finally, a hydro-nephrosis is made out. An obstructing calculus is suggested, but the x ray shows no stone. Murphy's "fist percussion" gives rise to the same reaction when the ureter is obstructed by a stone, and then, too, there is the enlarged shadow of the kidney. What have we? We are being confronted by a ureter with a kink that resulted from the contraction of the connective tissue that closed in the cavity left by that retroperitoneal abscess.

Of seventy-five slender, flat-bellied persons, none of whom had ever suffered from any intraabdominal discomfort, all showed varying degrees of what would be ptosis in comparison with as many short and protuberant-bellied individuals. Often the ptosis seemed extreme, but with lumen intact there was nothing to be feared. Nothing to be done about it. We concluded that these loosely hung up bowels were so suspended as a compensatory measure to offset their narrow surroundings. We also concluded that among such loosely hung up intestines, retrocecal appendices are much more common than with the pot-bellied. We were driven away from our plicating mania by looking at the appendix first, and then, whether or not it was diseased, removing it.

But heaven help those who would, today, dare to remove a retrocecal appendix with all its TNT, if it was not diseased, to suit the regimented standards of the standardized hospital. Well, we asked for it, and we were asking more of standards, regiments and the privilege to think, and solve our own problems—that great boon of life, liberty and the pursuit of happiness—when our Supreme Court stepped in, opened the bridge and let us recross the Rubicon.

No wonder we went wild on visceroptosis and viscerostasis. May I hope that the tone of repentance I have striven to inject into this article will be recognized? And may all of us hope that if to fall is to be our future plight, we will not, as have others of the trade unions, fall athwart the path of our country's heroic defense.

417 WYLLIE STREET.

REPORT OF A CASE OF FECAL IMPACTION

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Fecal impaction is the lodgment, wedging in and arrest of a fecal mass, abnormal in size and character, in some portion of the gastrointestinal tract. Impactions are seen by the proctologist because the symptoms generally point to the rectum, although the lesion may be higher up in the intestine.

Impaction is favored by the stagnation of the fecal current in the presence of stenosis, inflammation, neoplasm or foreign body, excessive roughage or other indigestible material, by loss of muscular tone from illness, old age or by deficient mental states.

We are not concerned here with those cases which are due to foreign body, such as the one which I re-

ported before the Section of Gastroenterology and Proctology of the American Medical Association in 1928, or a case seen recently which was produced by a glass tube forced in from below in an erotic episode. We shall limit our remarks to such cases as are caused by retained fecal masses alone, unrelievable in the natural manner or by the aid of laxatives and enemata. In those conditions the stool is backed up in the ampulla behind the narrow anal canal and contracted sphincter, and is finally molded into a globular form by the prolonged action of the expulsive forces. The mass becomes in effect a ball-bearing valve, which remains firmly plugged in the lumen but slides up at

once when attempts are made to grasp it. If this persists and the impaction cannot be broken after dilatation of the sphincters, the result might be an obstruction of the intestine. The case presented here has interesting features in treatment which furnish the reason for this report.

Case Report

The patient, an obese woman, married, the mother of three children, had a previous history of chronic constipation but no other significant symptoms. She had complained for the past ten weeks of a dull pain in the lower abdomen and back, a dragging sensation in the pelvis, straining at stool with occasional bleeding, distention, anorexia, but no loss of weight. She did not stress constipation because that was her usual state and the bowel movements appeared no worse than before her illness. Blood pressure, urinary examination, hemoglobin estimation and blood picture were normal. Abdominal examination was not satisfactory because of the excessive amount of fat. Vaginal examination disclosed a regularly rounded, globular, dome-like elevation of the posterial vaginal wall extending upwards two and one half inches. On digital examination the lower limit of a rounded mass the size of a large apple could be palpated in the rectum. This mass was freely movable, pitted on pressure but slipped up at once when any attempt was made to dislodge it by manipu-

lation. A diagnosis of fecal impaction was made and manual removal under anesthesia advised.

The patient was catheterized and at operation every attempt to bring down the mass failed because it moved at once into the sigmoid when touched. To enable the operator to bring it down, several towels were rolled into a firm pad, placed in the center of the abdomen and held down with broad strips of adhesive plaster applied tightly across the abdomen. An assistant made pressure above the pad and the operator, with two fingers in the vagina, hooked them over the upper limit of the mass to steady it, the impaction was broken up and removed piecemeal. It weighed approximately sixteen ounces and the laboratory report showed it to be made up of dried fecal material. She made a normal recovery and was discharged after four days.

Summary

1. A woman with chronic constipation complained for ten weeks with symptoms referable to the abdomen, but did not stress constipation.

2. A nonsensitive, rounded mass the size of an apple, which pitted on pressure, could be palpated through the vagina.

3. Certain manipulations are described by which it was steadied, held in place and removed.

545 WEST END AVENUE

ERYSIPELAS AND RHUS TOXICODENDRON

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While serving as resident physician at the State Hospital for Deformed and Crippled Children at West Haverstraw, N. Y., one of the night nurses, Miss H., aged thirty-four years, suffered from an attack of facial erysipelas. Her face was swollen, red and painful, her temperature was 103° F., pulse and respirations normal.

I at once treated the inflammation by Stelwagon's method, which consists of the application of a facial mask of thick gauze kept constantly wet with a saturated solution of hyposulphite of sodium. Of course there was an opening in the mask over the mouth and nostrils.

We had none of this sodium salt in the dispensary, so I procured a pound from the roentgenologist, knowing that this drug was used to clarify negatives after developing. Night and day nurses were detailed to care for the patient and they were given instructions to renew the solution as soon as the bottle was empty. To control the temperature and as a tonic I prescribed tincture of ferric chloride, ten drops, three times a day, and to keep her bowels open I prescribed a mild laxative as required.

The patient improved daily under this treatment and at the end of three weeks was convalescent. At no time was any form of ointment used, and her face presented a clear skin with no sign of scar tissue or blemish. She was in excellent physical health and returned to duty.

A few weeks later two boy patients of the institution were walking around the grounds, when they came to a stone wall at the northern end of the property. One

recognized poison ivy growing upon the wall; he picked several leaves and rubbed them upon his face, arms and hands. The other said he could do that too, and proceeded to follow suit.

In about four days while making my rounds in the ward the nurse called my attention to a boy whom I detected at once was suffering from ivy poisoning. His face was greatly swollen and also his arms and hands. He had a temperature of 102° F., pulse and respirations normal.

I asked the boy if he had come in contact with poison ivy within the last three or four days and elicited the fact of his having rubbed some of the leaves upon all the parts which were inflamed and swollen. The inflammation was so much like that of erysipelas that I at once put him on the same treatment I had given the nurse. The other boy, who had demonstrated his lack of fear of the ivy, suffered no ill consequences, because he enjoyed immunity.

Inside of twenty-four hours the patient showed a marked improvement, and daily became better. His temperature subsided in three days, and the inflammation presented a much less angry appearance. He made a speedy recovery.

I therefore was satisfied that I had demonstrated, to my entire satisfaction, an excellent treatment for ivy poisoning. I can heartily recommend it to other physicians, and in the next case of ivy poisoning I hope they will give my treatment a trial. I am quite sure they will obtain the same good and speedy results that I did.

73 HENRY STREET

Symposium on Internal Medicine

INFLUENZA

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In Reynolds' famous *System of Medicine* Edmund A. Parkes gives a detailed account, from a historical viewpoint, of the cyclic infection that is now known as influenza. In this valuable paper he gives a lengthy account of the different titles which the disease received through the centuries, and the dates of the recurrence of each epidemic up to the present time. The titles referred to are highly interesting from a medical viewpoint, as well as from the popular ideas of the disease. Some of the older definitions of the disease have come down to us from the pens of celebrated physicians of each age. For instance, Sydenham called the disease peripneumonia, Hoffman called it *febris catarrhalis*, and Cullen called it *rheuma epidemicus*. The names which popular tradition gave to the infection were for the most part due to some special symptom of the disease. For instance, the French called it *quinte* since the cough usually took place about every five hours. In France it was also known as *follette*, *petite peste*, *coqueluche*, and *la grippe*. In Italy it became known as influenza, a name it has still retained. This name was thrust upon the infection since it was thought to occur from some unknown influence in the heavenly bodies. In Germany it was known as the *Ziepf*, probably from the verb *zirpen* to pipe or chirp. It was also known as *Schafhusten* since it resembled the cough of the sheep. In Russia it became known as Chinese catarrh, in Italy and Germany as the Russian disease, and in France as the Italian fever. It has also been dubbed Spanish influenza. Each nation seems to have some pride in thrusting the dread disease upon another.

More Definite Historical Data

Hippocrates is supposed to have made allusions to this disease in his writings. History points out a disease that spread through the Athenian army in Sicily in 415 B.C. In 827 a disease of the same nature appeared like a plague which was accompanied by a persistent spasmodic cough and passed over the most part of Europe. Similar epidemics occurred in France and Germany in 796; and in 1175, 1229, 1299 other epidemics were recorded. In the fourteenth century the records became more regular and more precise. The following list is recorded:

In the fourteenth century, six epidemics; fifteenth century, seven; sixteenth century, eleven; seventeenth century, sixteen; eighteenth century, eighteen; nineteenth century, ten (for the first half).

Some of these epidemics were spread over the civilized world, and seemed to have had their starting points in different parts of the universe from which they spread rapidly and infected the greater part of the world. One of the recent epidemics seemed to start from Spain, hence was called Spanish influenza, but there appears to be no rational meaning of such a term.

Sometimes the spread of the infection was exceedingly rapid and at other times slow and uncertain. In the last two epidemics the disease spread rapidly over the whole of the United States in a few weeks. From this we must assume that the disease is mostly air-borne, but there seems to be no doubt that individual contagion also has much to do with its spread.

The infection has been supposed to pass from China to Russia, and afterwards to Germany, Holland, England and France. In a general way the epidemics seem to pass from east to west, but there are exceptions to this rule and it has been known to pass from the northern parts of America to Russia and from thence to the rest of Europe. When it invades a large city it generally prevails for six to eight weeks or longer, then passes away and may not be heard of in its epidemic form for twenty-five years. It has been known to travel over lofty mountains and across the seas where the usual means of communication through individuals could not occur.

Its exact origin seems to be still unknown and, as we have seen, each nation has the invidious task of placing the blame upon another. It has been thought to originate from conditions of the soil, the atmosphere, the temperature, or climate of a locality. It has been connected with fogs, rains, mists, electrical phenomena, and volcanic eruptions, and even through fungi in the air (flies and caterpillars). In fact, it is clear that no one has ascertained its origin and it may be one of those curiosities of nature that are found, such as comets that recur in cycles without any very definite reason.

Symptoms

The symptoms of influenza generally begin with a raspy, irritated sore throat. This is soon followed by fever, which is high or low according to the severity and virulence of the malady. Soon after a violent spasmodic cough begins which may continue for several weeks or die out in a short time. If the infection is limited to the throat local symptoms only occur. There may, however, be some soreness around the edge of the ribs from excessive action of the diaphragm. There is generally a sense of heaviness or malaise, headache, and superficial neuralgic pains in any part of the body. When, however, the disease passes downwards into the bronchial tubes the general malaise and discomfort increase. Fever may run high for a few days and the sputum may contain a good deal of blood in the exudate. In the present epidemic, however, pneumonia rarely supervenes. In more severe epidemics pneumonia usually occurred in from five to ten percent of such cases.

The bronchitis that follows often takes on a chronic character as indeed do all the other symptoms of the disease. The claim is that this type of inflammation is

of the catarrhal variety which does not generally pass into pneumonic consolidation. This may be true, or what is most likely, it is due to the character of the invading bacillus. When the disease lingers in the bronchial tubes blood-spitting continues. There is some slight dullness in the infected areas and the vocal-resonance may also be slightly altered. Fine râles, like the crushing of tissue paper, may be heard over one or both lungs. This is characteristic of epidemic infection. In more severe epidemics the inflammatory condition does not rest merely in localized bronchitis but may assume a more serious character, extending to the air-cells of the lungs in localized areas of bronchopneumonia, more rarely pleurisy, bronchiectasis, and even in empyema. These cases last months instead of weeks and are more likely to follow a severe epidemic than the present mild one.

In this epidemic an extraordinary rise of temperature often ushers in the attack. This is especially common in children. The thermometer shows a rise of several degrees, 103° to 104° F., but may return to normal in two days. In other words, the attack passes off rapidly, due more to the mildness of the epidemic than to any other cause. In more severe epidemics death often occurred in a few days before there was any local lesion which could be accountable for such an outcome. Complications are sometimes found in other organs, such as the liver when an icteric state of the skin exists. The heart muscle is said to be sometimes affected. The pulse, at first rapid and full, soon becomes weak and infrequent. Marked dyspnea has been noted. Where death has occurred in a few days, as in previous severe epidemics, it appears that the toxins of the disease were sufficient to blot out life even before any complication took place. Such cases seem to be beyond the aid or scope of medical art as it exists today. In many cases in a milder epidemic, a state of nasal catarrh exists and there is always the possibility of extension to the eustachian tubes. Laryngitis often results from spasmodic coughing. The cervical glands are not often infected.

Marked Affinity for Nervous Tissues.

Influenza shows a marked tendency to attack the nervous mechanism of the human body. This is seen even in the mildest cases where a sort of universal neuralgia occurs. There is marked hyperesthesia of the whole nervous system. The pains come in spurts and may involve any nerve trunk or the whole spinal system at once. At times this pain is of a stinging, irritating type and is apt to come at certain times of the day, resembling the spasmodic cough in this respect. The painful feeling may even extend to some special part, as the small muscles of the eye or the anterior aspect of the sciatic nerves when the patient cannot flex the limb upon the abdomen. A rachialgic pain may affect the entire spine or be localized at a certain point, causing a kind of unusual lumbago.

Pain in the occipital region is common, because of the involvement of the occipital nerves, or it may arise in the outer branches of the brachial plexus preventing the patient from raising the arm. Both the deltoid and the trapezius muscles are often involved in such cases. In some cases neuralgic pains of a fleeting character—flying neuralgias—often are felt in the limbs. Browache is common, with dizziness as a concomitant

symptom. Anginal attacks sometimes occur in the fauces with expectoration of a blood-stained exudate.

The most peculiar symptom of this disease, however, is its potent effect on the mental centers of the brain, bringing about a state of profound dejection or depression, which closely resembles a form of mild melancholia, or might be contrasted with the depression that follows bromism or the use of morphine or barbital. There is utter dejection or "depression of spirits", which is a homely appellation for this dreadful mental state. As in all mentally depressed states the sufferer awakes early and cannot rest. The gloomy feelings cannot be expressed in words since the manner in which each sufferer expresses his sufferings from this condition depends on his particular constitutional makeup. Most authors say the depression is profound and obstinate; and life seems to be shorn of any sense of pleasure or reality during the course of this extraordinary state. As regards the primary pains Osler says that besides dengue and smallpox he knows of no other disease in which so much pain exists at the outset.

There can be little doubt, judging from the symptoms of influenza, that the cause is the same in both mild and more severe attacks. This also would limit the bacterial causation to some single type of organism, while with our present knowledge there are at least four different varieties of bacteria found in connection with influenza. We cannot with any certitude pick out the offending germ at present, but those that are associated most commonly with the disease should have preference over those that are less often found. Dible reviews this kind of uncertainty which we will cite when discussing the bacteriology of influenza. In ordinary epidemics the Pfeiffer bacillus does not seem to rank as the predominating causal factor of influenza.

Cerebral Toxemia

We refer again to this happily unusual but often persistent state in the nervous system after an attack of influenza. We should like to quote Dr. Wilson who writes in Hare's *Therapeutics* on this subject. He says: "Nervous phenomena in greater or less degree appear to be present in nearly all cases of influenza but there are a certain group of patients in whom this anatomical system is especially implicated. This selective action may result from some preexisting weakness, either congenital or acquired. One of the most potent factors in establishing a cure of this distressing condition is the early restoration of the general health and nutrition. Neurasthenia may be initiated, and especially is this likely to occur if a predisposition exists. If mild it generally yields to general hygienic measures, but if severe and occurring in an individual with a neuropathic disposition a formal rest cure may be required.

"Psychoses of various kinds have been described in connection with influenza. In some cases they appear to be due primarily to the infection in the greater number, however, a psychopathic disposition can be demonstrated; and it would seem as if the infection had kindled some latent process into activity. To prevent and cure these mental disturbances every effort should be made to overcome the profound depression. Prolonged rest in bed, nourishing food, and tonics are essential."

We might add that the depression is of such a nature

that prolonged rest is not easily undertaken. In fact, the patient is often better up as in the case of bromism. Lying in bed seems to aggravate the depression. It might rest the muscles but not the mind, which should be diverted by some simple mental or physical work. The patient is extremely restless, wakes early in the morning in utter dejection. It seems to be a curious fact that those disposed to neurasthenia or actually suffering from this nervous malady are the chosen subjects for this state of mental dejection. This is clear enough when we consider how susceptible such subjects are to the influence of drugs, alcohol, and even changes in the weather. In any case, the symptoms created by influenza take a ready hold and retain it tenaciously in such subjects.

The action of the influenza toxins closely resembles that of narcotic poisons, that is, a depressed state of the higher mental centers of the brain; and as we know little concerning the normal function of these centers it is not surprising that we know so little about abnormal conditions. It is sufficient to know that such states exist and that some form of intense irritation interferes with the normal function of the brain cells. For this state the peculiar term, "depression of spirits", still holds good, as well as that of neurasthenia, nervous prostration, etc. For all practical purposes these terms are applied correctly to aberrations of function in the nervous system under different conditions. We understand that certain chemical drugs as well as bacterial toxins can produce such results. They can enter into the brain cells and dominate the normal functions for a while, producing that state which is known as melancholia and nervous prostration. The progress of such states depends very much on their cause. Sometimes even when the irritating drug or bacterial element no longer exists, the morbid phenomenon still continues. As a sequel to influenza this state is commonly found. It depends on the reabsorption of the poisonous toxins in the sites of infection and readily yields to treatment when proper precautions are taken to remove such infecting sources of disease thoroughly. Drugs only add to the prostration—one poison is enough for the time being—and the eradication of such a poison is followed by excellent results.

A Word About Prophylaxis

It seems doubtful if any special drug possesses prophylactic properties. Some, however, have acquired this reputation, namely, quinine, calomel, and the salicylates. As the infection travels rapidly and faster than any mode of travel, any form of prophylaxis to prevent contagion through the air is manifestly absurd. Attempts should be made, however, to prevent spread of the disease through personal contact and this might be attempted by the use of a surgeon's gauze mask wet with some form of alcoholic extract. Care of the secretions, especially those coughed up, should be one feature of prophylaxis. Such exudates should be caught in some receptacle and burned each day. Articles in which food or drink are contained should be boiled before and after use. Coughing and sneezing should be controlled as much as possible. Ventilation should be encouraged. Segregation, as far as possible, that is, avoidance of crowded places, is suggested. Bedding and linen should be sterilized and ambulatory cases should be advised to cough into a handkerchief and avoid con-

taminating his neighbor as much as possible. The best means of preventing the spread of the disease from its initial site is to destroy the bacteria that set it up, and this will be discussed later on.

Bacteriology

At the present time, the bacteriology of influenza is far from being established and there is still much doubt as to the dominant bacillus. In fact, there seems to be an assemblage of bacilli each of which claims to be the actual cause of the disease. A small pneumococcus is often found in the secretions from the fauces and the bronchial tubes, also clusters of staphylococci and more rarely streptococci. The Pfeiffer bacillus is said to be present in about thirty percent of mild cases, but in serious cases it is the predominating factor. As to the filtrable virus known as the *Bacterium pneumosintes*, there is still a great divergence of opinion as to its character and potency to produce influenzal disease, so that up to the present time the actual cause of the disease is still in doubt and several types of bacteria are presumed to be the causative agency. In the ordinary endemic case the preponderating bacterial agency is certainly not the Pfeiffer bacillus. However, according to Dible and other authors, the Pfeiffer bacillus dominates the scene in acute infective epidemic influenza.

Dible in his excellent work on bacteriology entitles the chapter dealing with influenza, "The Influenza Problem," in which he gives an analysis of the present day theories of this disease. He admits that the problem is unsettled but finally asserts "that the Pfeiffer bacillus is definitely pathological for laboratory animals, and that it produces a poisonous toxin that is responsible for many of the clinical phenomena of the disease. The presence of this bacillus excites antibodies in the blood serum. The real question is whether it initiates these lesions or merely participates in them. On the other hand the *Bacterium pneumosintes*, that is, the filtrable virus, is extremely disappointing as a pathological agent; it cannot hold a candle to the Pfeiffer bacillus in this respect, and in attempts to produce experimental disease in man it seems that it must also yield place to that organism.

"It is difficult to find a more difficult problem than the bacteriology of influenza. There is no firm ground anywhere, even such matters as the characteristics of the Pfeiffer bacillus and of the disease itself being uncertain. It is hard to investigate a disease that may change its characteristics within a few months. For this reason, if for this alone, it must be the first essential in an investigation of the disease that this be carried out upon epidemic influenza. Uncertain though we are of the position of the proposed claimants to its etiology, the problem of influenza is much better defined than it was prior to the production of the mass of confused work we have been reviewing. The issues have been made clearer and we must wait for the next appearance of the disease in epidemic form for the problem to be solved."

Of all the types of bacteria that appear in the mixed infection of influenza a small diplococcus in numerous but dispersed colonies is most constantly present. It is found regularly in the secretions of the fauces and the bronchial tubes, and this is so evident and so constant that it must in some manner represent the type of infection we know as influenza. Indeed this type of bacillus

may be the causal factor that enters into the varied and unique symptomatology of the disease. When they disappear the general and local symptoms of the disease also disappear. This type of bacterium cannot be said to represent the usual form of the Pfeiffer bacillus, but it is found more constantly and may be responsible for many of the symptoms of this disease. This type of bacillus appears as a small diplococcus with a distinct capsule.

Prognosis

This naturally depends to a great extent on the virulence of the epidemic. In 1918 the prognosis was exceedingly grave. In the present lighter epidemic the prospect of recovery is much better. In all types of influenza infection certain serious sequelæ may follow. Many of those states are found in the lung tissues, others in the nervous system; prostration and protracted convalescence are common events. As long as the infecting principle remains in the throat or lungs, so long will the symptoms of illness continue, but in a general way the majority of patients pass through the quicker phases of the disease without sequelæ, while a few are rendered permanently debilitated for weeks or months after an attack of even the mildest type of influenza.

Treatment

Most physicians will prescribe a sedative in the form of a few grains of Dover's powder with one of the coal-tar compounds, as a necessary prescription in the early stage of infection, but to continue such a line of treatment would be deleterious to the patient. We find in codeine compounds a useful cough medicine but occasionally the spastic cough will not yield to anything outside a prescription that contains an adequate dose of morphine. Of course the age and general condition of the patient must be taken into account. When an acute bronchitis develops there are many good expectorant prescriptions to be considered. Of late a good deal has been thought of the guaiacol compounds, with an added amount of ammonium chloride if necessary. How such medicines act it is difficult to say since they enter the stomach on being swallowed. Probably the action is a reflex irritation through the fauces. In any case they seem to be useful in promoting expectoration of the toxic secretions of the bronchial tubes. They aid in expelling the blood-stained sputum and thereby hasten cure and prevent absorption. In the stage of convalescence when an irritating cough still hangs on, creosote and cod-liver oil are beneficial. We do not possess any form of vaccine at present that either prevents or cures this disease.

The sulfonamides have been on the whole rather disappointing in influenza and it must be remembered that they can also depress a system that is already overlaid with toxic material. Locally, a spray of one of the sulfa drugs may have some merit, but as a rule they are highly irritating to the throat and only add to the discomfort of the patient. Boric acid in proper proportions used as a gargle or spray is quite as good as any other local remedy but it must be used constantly to cleanse away the persistent secretions which accumulate in the fauces and from which most of the toxic symptoms arise. If used as a spray or gargle every hour the general symptoms of the disease show a marked improvement. Of course it is understood that if the inflammation has passed downwards through the larynx into

the bronchial tubes it is not possible to arrest or cure it by any method of cleansing the throat. In such a case vapor might be useful, also expectorants as previously mentioned. Counterirritants applied to the chest wall sometimes relieve the tightness and soreness around the pectoral muscles. Local antiseptics do not possess any special properties outside of the boric acid they contain. Bastedo calls them "psychic antiseptics". Some of these preparations are exceedingly irritant to the inflamed condition of the fauces; and some medicated lozenges contain potent chemicals that are irritant to the throat and poisonous to the stomach.

Treatment of the severe symptoms following influenza must be carried out in more detail. Take a case of cerebral toxemia, for instance. In treating this intense form of toxemia it would be well to remember that the mental state often takes on the form of melancholia. The patient wakes early in the morning unrefreshed from sleep, the toxic elements of the disease being absorbed from its focal sites during the night. Fears, uncertainties, and inability to work either mentally or physically form part of the sufferer's complaint. To this is added a mental condition of intense introspection. In a way this step resembles that of opium poisoning except that the mental centers are involved in a different manner. The perturbation is difficult to withstand but it has not the suicidal tendency of bromism nor the intense physical irritation of morphine poisoning. At all events it is a most profound state of being. It appears in exacerbations about every third or fourth day. Indeed the whole history of influenza seems to be dominated by this peculiar state of intense irritation in the nervous system, in the character of the neuralgic pain, and in the recurrence of fever, cough, improvement one day, depression the next. In some epidemics of the early centuries this peculiar trait was noticed and had been set down as a malarial tendency, or as a concurrent malarial disease. To use a common phrase, there is a marked "depression of spirits". The patient cannot throw off the unusual feeling of dejection and almost despair.

It seems rather peculiar that a bacterial infection can produce a genuine melancholia like that produced by a powerful narcotic. The similarity of these conditions is remarkable. The usual type of depressive diseases of the mind may be traced to some previous addiction to alcohol which is passed down to the fifth generation in the same family. In any case the morbid mental state following sometimes even a mild attack of influenza is likely to continue indefinitely unless proper precautions are taken to destroy the toxic states that produce the diseases.

While on this subject, we should like to say a few words about the use of strychnine in the prevention and cure of this depressed state of the nervous system following influenza. Strychnine has physiologically little or no action on the mental centers but it has a decided and potent action on the spine. Large doses have always been associated with the prevention and cure of the depressed state of the nervous system after influenza. We feel as if this contention is not without reason. Still it must be admitted that strychnine is a potent irritant to the nerves, increasing the reflexes of the spinal circuits, stimulating the heart, and blood pressure and adding greatly to the discomfort of the patient who is already in a state of marked and intense irrita-

tion. If the drug should be used at all it should be given in small doses only and preferably in the form of *nuxvomica*. Like caffeine, strychnine increases pain in the sensory centers when the tension of the nerves is already at its highest point. It also increases the insomnia which is so constant a factor in nervous depression, and in a general way also increases the nervous tension which in such cases is a most undesirable condition.

In the neuralgic conditions that accompany and follow influenza there is a semi-paralysis of the muscle fibres so that the muscles cannot be moved or if moved excite much pain. This condition of the peripheral nerves is probably due to a real neuritis in the nerve trunks, and is exceedingly painful, especially when the muscles are used. The coal-tar products seem to have a temporary sedative action in allaying the pain but do not cure the condition which often continues despite the use of drugs and external applications. The pain has a tendency to recur every second day, as many grippe symptoms do, and at certain times the nerves become extra sensitive. These neuralgic conditions are found in almost any nerve trunk in the body, and can be cured immediately by the simple operation of acupuncture. A small hypodermic needle, No. 23, is inserted several times into the painful sites. An immediate and permanent improvement takes place, the pain disappears, and the muscles can be used again. This is to be recommended highly in cases where the arms cannot be raised or the limbs flexed, and walking is impossible. It also applies to pains and distress in the spine, in fact, to any part of the body. It is not necessary that the needle should enter the nerve, acupuncture at the site of pain is all that is required. It is difficult to explain the immediate cure in such cases, but there probably is some reversal of the nerve force due to the sudden counterirritation. This simple treatment does away with the necessity of using depressing coal-tar drugs, or opiates, which cannot be recommended in depressed states of the system in influenza.

Vitamins and glandular treatment may be tried as tonics after an attack of grippe, but they have no particular value except as aids to cure in convalescence. The rest cure is essential in cases of prostration, but in most cases only a partial cure can be expected. This is an exceedingly useful adjunct to other lines of treatment. A few hours of extra rest, especially in nerve cases, is very beneficial to the sufferer and also promotes early convalescence. In the more severe cases, with bronchitis or other lung complications accompanied by fever, absolute rest in bed is demanded.

The catarrhal symptoms of grippe hang on for weeks or months after an attack. Damp weather and variable temperatures seem to prolong this condition so that when possible a change of air and scene often hastens convalescence. However, as long as bacterial flora are found in the fauces, nasal cavities, or the bronchial tubes, so long will the intermittent symptoms of the disease continue; and naturally the cure of such a condition rests more on destroying the focal sites of the disease where this special type of bacillus generates than on any other conception of the illness. The best means at our disposal at present is the constant lavage or irrigation of the infecting sites with some mild non-irritating form of antiseptic. We cannot say that such a treatment destroys the bacilli, but it seems logical to infer that they can, so to speak, be washed away

from positions that are easily reached. To be of any service, this form of lavage should be performed frequently, in the form of gargles and sprays in the nose and throat. A warm boric acid solution is exceedingly useful in such cases, followed by the use of the spray with the same solution. A weak solution of one of the sulfa drugs may be used, but they are generally too irritant to inflamed parts and only add to the discomfort of the patient.

The best test for the progress of any case rests in the microscopical examination of the sputum. At first this will be found to be a field laden with numerous colonies of different types of bacteria. We have already enumerated them when speaking of the bacteriology of influenza. To the clinician they are of little import and the patient does not care particularly which type of bacteria is the cause of his illness. At all events, all types disappear from the secretions if this form of lavage is carried out properly and consistently. Even in profound mental conditions improvement soon takes place, and though it may be slow and intermittent the patient is sure of recovery in the end. The examination of the sputum daily can be carried out easily in hospitals and laboratories, but is not so convenient in general private practice. It is invaluable, however, whenever it can be accomplished.

The most persistent type of bacterium in the secretions seems to be the small diplococcus already mentioned. The cure and also the prevention of this disease seems to lie in our ability to destroy the septic types of bacteria found in the secretions. A thorough lavage of the respiratory passages acts as a preventive of the infection and can be used by physicians and nurses as well as by private patients with excellent results. As long as the groups of bacteria remain in the secretions from the nose, throat, or bronchial tubes, so long will the symptoms of the disease continue. Elimination and recurrence seem to take place every few days. Examination with the microscope will clearly point to conditions that prolong the infection and this should be done whenever possible. The identity of the causative bacillus, however, is not as important to the patient as the cure of his illness. It matters little to him whether we call the infecting source the Pfeiffer bacillus or the streptococcus but the presence of such organism in his secretions makes a vast amount of difference to the sufferer from influenza. Pneumonia is rare in this present mild type of epidemic influenza. It seems clear that the virulence of the present epidemic is not as great as that of 1918. In that year the type of infection was far more virulent. Death often took place in a few days even before any serious complication had time to occur. If true pneumonic consolidation takes place, hospitalization and all that that means must be adopted.

A word about attempts to check or cure the disease by means of astringent jellies or vapors, or nose drops. For the most part, such treatment cannot affect the course of the disease but may relieve for a short time the stuffiness in the nostrils or the soreness in the throat. There is danger, however, of blocking up the secretions or rendering them more fluid so that absorption occurs more readily. The vapor treatment in particular tends to liquefy secretions and thereby make them more absorbable. Lavage with some mild non-irritating antiseptic is far preferable to the use of nasal

douches, drops, and vapors. In the use of such remedies there is danger of retention of the secretions or of forcing them upwards into the eustachian tubes. Antiseptic lozenges often contain poisonous chemicals that irritate the throat and disturb the stomach. Stimulants and tonics are useful in the stage of convalescence. Stimulants, such as extracts of kola, wine, coffee, sometimes do good were it not for the danger of habitual use. Local complications, such as otitis media must receive appropriate treatment. The rest cure is useful in protracted cases or where the nervous elements of the

disease are uppermost. It will be a fortunate event for humanity if the present epidemic is the usual twenty-five to thirty-five kind and if recurrence of a more severe type does not take place. No specific treatment has yet been devised, either as a prophylaxis or a cure of this disease. Fortunately, we know of the bacterial causation, and therein lies the hope of discovering some means by which we can prevent infection; or if infection has taken place, of eliminating and curing the disease.

93 FOURTH AVENUE

A STUDY OF 13,608 BASAL METABOLISM TESTS

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The basal metabolic rate is determined by comparing the volume of oxygen consumed per minute by a patient to that of an average normal person of the same height, weight, age and sex. The rate is reported in figures that represent a certain percentage above or below this theoretical optimum. The metabolism is higher in childhood, decreasing with age, and is normally seven to ten percent lower in women than in men. Changes in temperature and barometric pressure cause slight variations and corrections are made accordingly. The test is performed while the patient is in a resting, or basal, state so that as many variables as possible are eliminated to allow a favorable comparison between individuals.

In order that the patient may be in a state of complete relaxation and rest, he is instructed to be available for the procedure as soon as possible after arising in the morning and to refrain from bathing, to dress slowly, to avoid haste and exertion and to ride as much of the distance as possible to the office. No food, beverages or medicine are to be ingested for twelve hours preceding the test, as digestion may raise the metabolism ten or twenty percent. The use of tobacco should also be avoided for the same length of time. On the evening preceding the test, an average meal may be eaten at the usual hour and water may be drunk up to midnight. Upon arrival at the office, the patient is put to bed in a dark, comfortably warm room and asked to relax, since freedom from worry, fear and mental tension are essential. Unless the patient follows these instructions, the metabolism may be increased and an incorrect reading obtained, although the same percentage of rise is not obtained in all persons. A low rate is considered more accurate than a high one because it is more obviously recorded during a true basal period. If a high reading is obtained, the test may or may not have been so performed. If doubt exists as to the reliability of a test, two or more are performed until reasonably close readings are obtained. The first test usually gives the highest reading, but two of the readings should check within five points. If the variance is greater than five points it is desirable to recheck the rate on another day, and if there is a difference of ten or more points it is necessary that a recheck be made. When the results of the test are above normal, even though they appear to be accurate, a recheck is always made at a later date.

Lactation and pregnancy cause an elevation in the

basal metabolic rate. The latter condition, particularly during the last four or five months, raises it from five to fifteen points, averaging about ten. In evaluating the test the presence of such a physiological condition must be taken into consideration. The test should not be performed on the female during menstruation. Before giving the test the patient's temperature is always taken. If it is thought advisable to proceed in spite of the presence of fever, the thermometer reading is recorded on the chart. The metabolic rate is either corrected for the number of degrees the temperature is increased, or the test is reported in the regular way and the clinician estimates its effect on the basal metabolism. The average rise in heat production is about 7.2 percent for each degree Fahrenheit above normal. Metabolic activities that do not increase oxygen consumption are not measured by the test. Several authors have written on the subject of basal metabolism and a few of the articles are of special interest (1-19).

If the basal metabolic rate does not agree with the clinical diagnosis, the metabolism machine and the patient should be checked. A leak in the region of the mouth piece, nose clamp, tubes, oxygen bell, thermometer, oxygen petcock, motor blower or other parts of the tester will raise the reading if air is allowed to escape, and vice versa. In rare instances there may be a leak through the patient's ear drum which has been perforated. If the clock runs too fast a lower reading will be obtained, and if it runs too slow the reading will be higher. The soda lime must be kept fresh. If it becomes too wet, too dry, or has been used so often that it will not absorb the carbon dioxide, it will usually cause a lower reading but may raise it in some instances due to difficult breathing. When the carbon dioxide is not taken out of the air there is a feeling of suffocation and breathing is deepened or irregular with a resulting increase in the rate. When the oxygen supply is nearly exhausted the breathing becomes very short and rapid. Obstruction to the breathing circuit, due to poor valves or improper functioning of the motor blower, may cause difficult breathing and increased basal metabolic rate or it may cause a reversal of the direction of flow of exhaled air through the inhalation tube to the oxygen bell with insufficient removal of carbon dioxide and decreased basal metabolic rate. The technician may make a mistake in recording, by drawing an incorrect slope line on the chart, by inaccurate figuring or by improper use of the slide rule.

In rare instances the metabolism cannot be satisfactorily determined. The patient may breathe without evidence of rhythm causing the recording on the chart to jump up and down with utter irregularity. Therefore, the clinician should ask to see the chart on which the test is taken. One glance at the slope line is enough to indicate that this particular test is without value as a diagnostic aid. A reading of this type may vary as much as fifty points from a correct reading. Swallowing or an occasional deep breath does not interfere with the accuracy of the test. If the patient falls asleep during the procedure, the basal metabolism will be too low. It has been stated that some individuals can raise the metabolism and temperature at will by intense thought and study.

In the series of basal metabolic rates herein presented, all types of cases are represented. A fairly good cross section in which the basal metabolism of the chronically ill in Southern California is shown. Of course, most of the hypothyroid and hyperthyroid cases had tests taken on several occasions while the normal patients were usually tested but once. The tests were given at the clinic of the Ross-Loos Medical Group over a nine-year period from October, 1931, to October, 1940. Equipment consisted of a Sanborn metabolism tester, Grafic model, water sealed; a McKesson recording metabor, water sealed, and a Sanborn waterless metabolism tester with a motor blower. In Table 1, the total number of readings obtained over this period of time is classified into groups beginning with the lowest reading and it is shown what percentage of the total number of readings is represented in each group.

Table 1: Classification of 13,608 Basal Metabolism Readings Obtained Over a Nine-Year Period

Basal metabolic rate	No. of readings	Percentage
Minus 50 to minus 41	14	0.10
Minus 40 to minus 31	85	0.62
Minus 30 to minus 21	680	4.99
Minus 20 to minus 16	1,290	9.47
Minus 15 to minus 11	1,999	14.69
Minus 10 to plus 10	7,827	57.51
Plus 11 to plus 15	662	4.86
Plus 16 to plus 20	415	3.04
Plus 21 to plus 30	399	2.93
Plus 31 to plus 40	151	1.10
Plus 41 to plus 50	21	0.15
Plus 51 to plus 60	44	0.32
Plus 61 to plus 70	13	0.09
Plus 71 to plus 80	6	0.04
Plus 81 to plus 90	2	0.01

It is found that in fifty-seven percent of the tests the reading is in the minus 10 to plus 10 group. Seventy-seven percent of the readings are included in the minus 15 to plus 15 group. At least ninety percent of the results considered normal are rated from minus 10 to plus 10 and ninety-nine percent from minus 15 to plus 15. About sixty-four percent of the total number of tests are considered to be normal. About two-thirds of those in the group from minus 15 to minus 11 and from plus 11 to plus 15 are considered abnormal. The unusually high readings were obtained in cases of exophthalmic goiter, although in this disease the metabolism may be at any level above normal, but the rate in toxic adenoma is seldom over plus 50. It is interesting to note that eighty-seven percent of the tests are below plus 11 and that only thirteen percent are above this. Thus hyperthyroidism has to be considered in only thirteen percent of the tests. The readings in this series from

plus 11 to plus 15 that are not considered normal for the individual are often due to a psychoneurosis, some minor illness or a failure to obtain a true basal state. The reading is frequently found to be lower at a later date.

The severity of thyroid disease is not directly proportionate to the elevation of the basal metabolic rate since the duration of illness and other factors are also important, but when the basal rate is considered with clinical signs and symptoms a fairly accurate estimate of toxicity is possible. Almost all of the true basals in our series above plus 15, or seven percent, were taken on patients suffering from hyperthyroidism. Other conditions causing hypermetabolism are less common, the diagnosis not usually being difficult to make and basal metabolism readings are seldom necessary. The reverse is true in cases of hypometabolism. The basal metabolic rate may frequently be below minus 15 without evidence of hypothyroidism being present.

In the classification of our series, hypothyroidism has to be considered in thirty percent of the cases in which the reading was below minus 10; in fifteen percent of the cases, or those below minus 15, special consideration has to be given to this condition. In some of these cases, thyroid extract cannot be tolerated to so great an extent as in a normal person and thyroid intoxication is often the result of its use, but thyroid tolerance does not signify thyroid deficiency. Even with a good therapeutic response, hypometabolism should not be considered as caused by hypothyroidism unless it has definitely been known that the results obtained from use of the thyroid extract are not simply a physiological or drug action due to the diuretic, diaphoretic or calorogenic effect of the hormone or its stimulation of the gonads, nervous system or new cell growth. Only in those cases of low metabolism where definite thyroid symptoms are relieved should a diagnosis of hypothyroidism be made because of clinical improvement. The diagnostic problem is therefore much greater when the basal metabolism is on the minus side, than when on the plus side, and when the reading is between minus 10 and minus 25 diagnosis is especially difficult. The normal patients and the patients with pluriglandular deficiencies and chronic debilitating diseases in this group are hard to differentiate from cases of mild hypothyroidism. When the basal metabolism is below minus 25 or above plus 20 the differential diagnosis is rather obvious, because the pathology of most diseases is then so marked. Cases of masked hyperthyroidism and hypothyroidism usually give a basal metabolism between minus 30 and plus 30. Thyroid disease is not suspected as a rule until a basal metabolism is taken since the symptoms the patient presents are mainly characteristic of disease of the heart, gastrointestinal tract, nervous system, etc.

Obesity usually gives a normal or low basal metabolism reading, but occasionally a reading as high as plus 15 may be obtained when no evidence of hyperthyroidism is present. Due to a diet low in calories and proteins, overweight patients may have a basal metabolism as low as twenty percent below normal. If they eat as much as a normal person, the metabolism is normal. The test should be taken before the patient is placed on a strict reducing diet and not two or three weeks later. Food increases the specific dynamic action, and protein causes a higher reading than fats or carbohydrates. Its effect on the metabolism can be shown by

taking a basal metabolism reading, feeding the patient a protein meal and repeating the test two hours later. While carbohydrate produces a definite increase in the metabolism, fat causes only a slight elevation.

Following a complete thyroidectomy there is a certain amount of oxidation, that takes place without thyroid stimulation, that keeps the patient alive. This metabolic activity of the cells is quite constant and the basal metabolism is about minus 40, but there is some individual variation even in this rate. Addison's disease may cause the basal metabolic rate to go down to minus 40 and in some cases of pituitary cachexia the very lowest basal rate is seen which can be as low as minus 50. These two deficiencies are fortunately rare. The metabolism is lowered in some cases of Fröhlich's syndrome, undernutrition, protein starvation, peptic ulcer, bradycardia, nephritis, cachexia, neurasthenia, dementia praecox, and psychosis with depression. It may also be lowered where intracranial lesions, pituitary tumors, skin disorders, and chronic debilitating diseases are present.

Oxygen retention in the body varies with different individuals. Heredity as well as the patient's environment and mode of life undoubtedly influences the metabolism. Small-boned persons generally have slightly higher readings than those with large bones. Probably there are brain centers that help regulate oxidation. In an occasional case the basal metabolic rate is normally low, just as the pulse and respirations are slow or the temperature and blood pressure low. When the basal metabolic rate is normally minus 20 but rises to a plus 10, a hyperthyroidism of the same grade of toxicity may be found as in a person whose basal metabolism is normally plus 10 and goes up to a plus 40. If the patient's rate of metabolism prior to illness is known, the diagnosis is simplified.

When the metabolism is increased blood dyscrasias such as pernicious anemia, polycythemia and leucemia can be ruled out by a blood count and a urinalysis is used to diagnose diabetes or nephritis. Neurological diseases accompanied by spasticity or tremor increase the metabolic rate. Parkinson's syndrome is a common example. Hypertension, hyperpituitarism, hyperadrenalism or cardiac decompensation, particularly if in an advanced stage, or the use, especially in large doses, of caffeine, ephedrine, epinephrine and dinitrophenol causes a rise at times. Anemia, fever and so forth may be present with hypothyroidism and thus produce a metabolism within the average normal range. Many diseases such as nephritis and diabetes cause the metabolism to be raised during some stages and lowered during others. Acidosis and change of diet are largely responsible for the metabolic changes in diabetes. Cardiorenal illness causes the basal metabolism to be increased when dyspnea and rapid respirations are present and decreased when edema and fasting are present. Abnormalities of the blood, heart and kidneys produce a normal basal metabolic rate unless in an advanced stage when the diagnosis usually is obvious. Pernicious anemia rarely causes a high reading since the advent of liver therapy.

Diagnosis of hyperthyroidism can be made only when the basal metabolic rate is elevated on more than one day, when there is clinical evidence of hyperthyroidism, and other causes of hypermetabolism have been ruled out. Too often, hypometabolism and hyper-

metabolism are considered synonymous with hypothyroidism and hyperthyroidism. The foregoing discussion explains the fallacy of this line of reasoning.

Summary

A series of 13,608 basal metabolism readings is classified according to the percentage occurring at different levels from minus 50 to plus 90. Ninety percent of all normal basal metabolism readings are found to range from minus 10 to plus 10, but ten percent of the normals are taken on persons who have a reading that is at a certain, fairly constant level above or below this group. A metabolic test falling in the hypometabolism or hypermetabolism group may be due to an error caused by a faulty tester, a mistake on the part of the technician, or a patient not being in a basal state. Eighty-seven percent of the tests are below plus 11, thirty percent below minus 10, and fifteen percent below minus 15; while thirteen percent are above plus 10 and only seven percent above plus 15. This latter seven percent includes most of the hyperthyroid cases. Conditions causing metabolic extremes are easy to diagnose because the symptoms and signs are marked. It is often difficult to determine the true cause of hypometabolism between minus 10 and minus 25, and every available diagnostic aid that the clinician knows must be employed. Diseases and physiological states causing hypometabolism and hypermetabolism are discussed, and it is stressed that these terms are not synonymous with hypothyroidism and hyperthyroidism.

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HALITOSIS AND ITS MODERN TREATMENT

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The author has chosen the layman's term "halitosis" rather than the old textbook definition, "atrophic rhinitis". Why? Because terms like *ozena*, *atrophic rhinitis*, *fetid catarrh*, etc., are misnomers, for the affection is, in a true sense, not a distinct disease, but a symptom of a number of disorders in various parts of the nose, throat, etc. Bad breath has also been for centuries a subject of great despair and of much dispute; it is one of the most difficult of troubles to deal with and in ancient times, according to authorities, excluded its victim from the privileges of the priesthood, and in more modern times it was actually grounds for divorce. The universal disgust for this affection is doubtless a cause for much treachery, hypocrisy and chicanery. Its unfortunate possessor may or may not always be aware of the odor from mouth, throat or nose. And who can tell how many have lost friends, jobs, sweethearts; how many have been deserted by their mates or divorced under some pretext other than the true state of affairs?

And while this trouble is generally difficult to deal with owing to a host of remote or specific conditions, it is in most cases a preventable trouble and, in many cases, is amenable to treatment and even cure—providing a proper diagnosis is arrived at and suitable treatment instituted. However, whether such condition is due to symptoms of disease of the nasopharynx, ulceration of the nose, polyps, diseased gums and defective teeth, rhinitis, pathological tonsils and adenoids or infected sinuses, the problem is by no means an easy one.

Etiological Factors

According to some investigators *ozena* originates principally from a chronic pus-producing inflammation of the ethmoidal and sphenoidal sinuses. I am convinced, however, that infected maxillary sinuses are of importance in the production of halitosis, or are at least a contributing factor. We also learn from postmortem examinations that the sinuses are, as a rule, only secondarily affected and that inflammatory pus-producing conditions are in themselves hardly sufficient to bring about the trouble.

Lastly, there is still another form of bad breath to be considered, namely, a simple condition due to colds (*coryza*) or lack of proper hygiene. It may occur as a temporary phenomenon from ordinary retention of mucous decomposition or neglect of hygienic principles in cases of acute colds, particularly in children; or in adults either from habits of overeating, constipation, use of tobacco, snuff, various foods (garlic, sausage, etc.) and immoderate use of drugs or alcohol. Constitutional disease, as diabetes, and gastric, intestinal, gall-bladder and kidney diseases, must not be overlooked; nor must we forget syphilis, whether inherited or acquired.

In any event, a simple case of halitosis may be due to one or more of the above named causes, and especially it may be due to neglect and perhaps untreated nose and throat conditions.

Mouth Breathing

The literature on the subject of disease of the nose and nasopharynx, especially chronic hypertrophic and atrophic rhinitis, as well as sinus disease, reveals a good deal of what we ought to know about *ozena*. As a matter of fact, a quite accurate diagnosis of nasal or nasopharyngeal disease can be made by means of simple inspection of the parts involved. Transillumination and x ray will corroborate the diagnosis in ninety-nine percent of all cases. For instance, take a certain type of mouth breathing—not that which one finds in children afflicted with large adenoid growths, nor in persons who hold their mouths open day and night, but a type characteristic of an adult person who breathes through his mouth a good deal during the day or night, but not all the time. Such mouth breathing usually results from obstruction in the nose or back of it. The obstruction may result from various causes, such as a thickened or deviated septum, chronic nasal catarrh, the presence of polypi in the nose, or of adenoid vegetations in the back vault.

A careful examination will generally corroborate these findings plus the presence of enlargement of the inferior turbinates. Though mouth breathing may become a matter of habit, it generally begins as a necessity brought about by nasal obstruction and embarrassed breathing. So, in order that our point of view may not be confused, it would be best to omit constitutional disease, diseased tonsils and adenoids, polypi, constipation, etc., and limit our work to the three principal causes of *ozena*—chronic rhinitis, atrophic rhinitis and sinus disease.

Vasomotor Disturbances

As long ago as fifty or seventy-five years, observers and writers have named the causative factor in chronic nasal catarrh as defective nutrition, gout and vasomotor disturbances. The mysteries of the vasomotor system as we understand it today may be briefly summarized as follows:

The vasomotor system is a part of the sympathetic nervous system and consists of a vasomotor center situated in the medulla, several subsidiary vasomotor centers in the spinal cord, and the vasomotor nerves. This remarkable system is connected with the blood vessels in various parts of the body, the muscular coats of which are supplied with plexuses and filaments of vasomotor nerves which regulate the size of the blood vessels. We also classify this system into two headings (very important): 1. Vasodilators, the stimulation of which causes dilatation of blood vessels and an increased amount of blood to a part (brought about by external heat, massage, etc.); 2. Vasoconstrictors, the stimulation of which produces contraction or constriction of the blood vessels and a diminished amount of blood supply to a part (brought about by cold, drafts and ice). The vasomotor system was discovered by Schiff in 1855 and localized and more accurately studied by Ludwig in 1871.

Chronic Nasal Catarrh

In his contribution to chronic hypertrophic rhinitis, published about fifty years ago, Seiss states:

"A large proportion of cases of rhinitis are dependent on what might be called central causes, the original lesion or condition being in the vasomotor system and associated with characteristic symptoms referred to other organs. Such patients are more or less 'nervous' and neurasthenic, with strong tendencies towards cardiac irritability and general circulatory disturbances; the action of the skin is seldom normal, and there is complaint of cold extremities. The condition present in such cases may be called a vasomotor neurosis and may be aggravated or even produced by purely mental causes such as overwork or emotional excitement."

The same author continues: "Defective nutrition, especially the atonic condition which follows fevers, seems to be the sole cause of certain cases of nasal catarrh and to be responsible for the peculiar vulnerability of the Schneiderian membrane which is present in certain subjects. Local causes may produce nasal catarrh or increase the disease when dependent on constitutional factors."

Yes, and to the foregoing we may add, fifty or seventy-five years later: Hereditary factors, peculiarities in nasal septal deviations, turbinal deformities and hypertrophies, allergic influences, hay fever and asthma, and undernourishment.

It is of importance to remember that nasal hypertrophies, even in simple form, may undergo papillomatous and myxomatous changes; they may bring about postnasal tumors so common in certain cases of chronic nasal catarrh.

Atrophic Rhinitis

More serious and depressing to the psyche than chronic nasal catarrh or deviated septum, etc., in connection with halitosis, is the "famous" nasal affection—*atrophic rhinitis*—*ozena*. According to several observers this trouble originates as a chronic purulent inflammation of the accessory sinuses, especially the ethmoidal and sphenoidal; the fermentation or decomposition of the secretion of these cavities furnishing the explanatory theory of the malodorous phenomenon. This theory was promulgated, copied and resurrected by European surgeons as long ago as 1876 or earlier.

There is abundant anatomical and clinical evidence, however, that the sinuses are, as a rule, only secondarily involved and that a simple purulent inflammation is hardly sufficient to produce the classical odor of the affliction. From the atrophied condition of the nasal chambers, especially the inferior turbinated bones, which generally accompanies the affection, it has been believed by the older observers that congenital atrophy of the turbinated bones and particularly the inferior, is the principal feature in atrophic rhinitis. This theory was probably outmoded long ago. While it is reasonably true that atrophy of the turbinates and the abnormal widening of the nasal chambers predisposes and favors the development of putrefactive changes within the nose, it is at the same time unscientific to rely on so insignificant a cause to account for the characteristic fetor in *ozena*.

To explain the stench in so-called halitosis, it would be necessary not only to analyze the existence of a certain microorganism which may cause putrefaction in the nasopharynx, nasal cavities, sinuses, etc., but also to

analyze the existence of some extra influence. This extra influence may mean an alteration in the chemistry of the nasal secretions produced either by the changes in the mucoperichondrium of the nose due to atrophy or from some systemic or constitutional cause. Some of the modern observers believe that *ozena* is due to anthropologicoanatomical causes—a shallow, broad nose and congenital development of pavement epithelium instead of the columnar (mucus-producing variety), leaving out purulent infections, syphilis, etc.

Then we have the theories of pressure necrosis and sclerotic atrophy. Pressure necrosis is the condition brought about by distention of the blood vessels—chronic engorgement of the erectile tissue. We may assume this condition to be a cyanotic congestion, the general circulation involved in the sluggish venous blood current. It is believed that the mucous membrane covering the vessels is continually being stretched to such an extent that pressure atrophy results. Sclerotic atrophy, on the other hand, is due to pre-existing inflammation in which connective tissue cells or fibers are deposited. This state of affairs after a certain time causes the tissues to contract and cut off the blood supply and choke down the glandular structure of the mucosa. Thus, local atrophy is produced and functional activity retarded or entirely abolished.

Of great interest are the assertions made fifty years ago in connection with *ozena* or halitosis by McKenzie, an American observer, in his contribution on cirrhotic (atrophic) rhinitis (1); the author stated:

"In this country the changes in the common catarrhal affections of the nose are most marked in the area covered by erectile tissue and are more pronounced in the lower or respiratory region, and in the bony nostril than in the vestibule, and occur in the posterior more frequently than in the anterior portions of the nasal fossæ. These changes have their starting point in one or more of three different structures—the erectile tissue, the mucous membrane and, perhaps, the periosteum. The erectile tissue is primarily involved, probably in those cases in which catarrhal conditions are met with as the result of reflex irritation (doubtless through vasomotor influences operating, in the first instance, through the constant or repeated erection of that tissue with subsequent development of trophic disturbances), and it is conceivable that the same result may be brought about through obstruction or other derangements in the local or systemic circulation."

The same author states again: "In another class of cases the process starts from the superficial layers of the mucous membrane, through the irritation produced by foreign substances, the lesions of acute or chronic constitutional or systemic diseases, either through direct infection or through vitiation of the general circulation, and the consequent changes in the nutrition of the mucous membrane. Even in this class there is always some secondary erection of the cavernous tissue."

The author continues, and we finally quote him: "There is still a third class in which it is probable that the changes in the erectile tissue are secondary to hyperplastic conditions of the perichondrium as, for example, in the hard, dense hypertrophies met with in syphilitic subjects."

Thus we see the link of progress and understanding of fifty years ago and today about nasal catarrh, *ozena* and pathological conditions of the perichondrium.

Ozena and Diseases of the Sinuses

In order of frequency of occurrence pathological conditions of the maxillary sinuses or antrum come first; and abscess of the antrum may enormously contribute to the cause of ozena or halitosis. Diseases of the ethmoidal sinuses undoubtedly come next in order. They occur in most cases alone and in some cases in conjunction with diseases of the other nasal sinuses. As in the case of the antrum, the ethmoid cells are usually affected by an extension of an inflammatory process from an acute rhinitis, bringing about an inflammation of the mucous membrane lining of the cells. Such inflammation is catarrhal in character and may be either acute or chronic.

Admitting that an acute catarrhal inflammatory condition of the ethmoid sinus is generally not a serious trouble and usually subsides soon enough, it may on the other hand change into a purulent and hemorrhagic condition, thus resulting in abscess of the cells—an exceedingly dangerous disease. Probably one of the most significant symptoms of suppuration and abscess of the ethmoid cells is a peculiar pain referred to the root of the nose, increasing in acuteness as the disease progresses and becoming complicated and extended. With the abscess formation and distention of the cells, the patient generally complains of severe pain in the region of the orbit, especially in the posterior portion of the eye: severe pain may also be felt in the frontal region. The patient may also experience a unilateral discharge of mucus of a bright yellow color. The ozena and halitosis are not so marked and are not so annoying as in the case of suppuration of the maxillary sinus. Should the trouble persist, as in the latter stages when caries and necrosis take place, the character of the secretion naturally changes, becoming thicker and cheesy.

The real seriousness of the matter comes when there exist large accumulations of secretion, distention, complication and the involvement of the general health and even life. With the distention of the cells from suppuration and mucus accumulation there is a giving way at the point of least resistance—the orbital cavity. As a result, there is a bulging of the eye forward and outward, followed by the involvement of visual disturbances, as narrowing of the field of vision, diplopia and general impairment of vision. There may be exophthalmos. The general health may be affected, the patient being restless and depressed mentally and experiencing loss of appetite. Suppurating ethmoiditis is frequently complicated by abscess of the antrum, orbital and frontal abscess, and meningitis.

The sphenoidal sinuses are occasionally the seat of a catarrhal inflammation which may contribute to the troublesome condition of ozena. Because of the high position of the communicating opening of the sinus, the secretions are liable to be retained in the sphenoid cavity, overflowing into the postnasal space—bringing about the familiar symptoms of coughing up secretions and halitosis.

The most common affection of the frontal sinuses is an inflammatory catarrhal condition (mucocele), and is always the result of an extension of inflammatory catarrh from the lower sinuses and rhinitis. The symptoms vary according to whether or not the frontonasal canal is open. In the case of the open duct, there will be a discharge of mucus from the nose, with or with-

out neuralgic pains in the face or forehead. However, should there be a closed canal the patient will complain of a good deal more trouble—the symptoms will be more severe. The accumulation of the secretions will finally lead to dilatation of the sinus. This dilatation may become so enormous that a soft fluctuating tumor is formed at the inner angle of the orbital cavity. The eye is generally pressed downward and outward. In very complicated cases the mucous membrane of the frontal sinus may be forced through the opening between the orbit and the tear duct into the nose, forming a tumorous mass which obstructs the nasal chamber. A curious phenomenon may also happen—the duct suddenly opens, the mucus is discharged into the nose, and the tumor at the inner angle of the orbit and in the nose disappears, to appear again upon closure of the duct. Needless to conjecture, the secretions are thick and malodorous and are a contributing factor to ozena and halitosis.

Treatment

The therapeutic history of halitosis or ozena is probably as old as the history of medicine. The term halitosis or ozena did not have the same meaning in ancient times as at the present day. The Greeks and Romans scarcely mentioned hygienic measures in connection with the nasal passages, and indeed it would not be too surprising if they neglected such important hygienic measures altogether.

However, some of our modern writers tell us that the ancients made hardly any distinction between "polyps" and "ozena"—the testimony of all recorded history seems to indicate that the trouble, especially its successful treatment, old and modern, is one of the most difficult problems. It may be well to state here that halitosis due to chronic constipation, dental caries, pathological tonsils and adenoids, noncomplicated sinusitis, can often be successfully treated and cured with little or no marked discomfort to the patient. But when "cure" of atrophic rhinitis is spoken of, it generally means a condition in which the patient experiences comparative comfort.

Treatment may be divided into the following groups:

1. Temporary nasal antiseptic treatment, while a thorough search and study of the case is instituted; tonic and hygienic treatment, attention to the gastrointestinal canal.
2. Removal of intranasal obstructions, growths, diseased processes and drainage of the sinuses; dissipation of the odor; stimulation of the healthy portions of the mucous membrane to vicarious activity.
3. Drug and medicinal treatment; the sulfonamides and mercurials.
4. Diet and attention to general health.
5. Surgical.
6. Geographical.

1. *Nasal antiseptic treatment.*—The methods of "cleansing" the nasal chambers by means of the nasal douche, irrigation by the anterior or posterior nasal syringe, and the instillation of drops are to our mind utter nonsense. The use of medicinal powders in the nose will undoubtedly do more harm than good. The nasal douche could become too dangerous a remedy, for it often subjects the patient to middle ear disease. In other words, the constant use of too much liquid in the nose may bring about a certain amount of saturation of the intranasal tissues as well as the eustachian

tubes, with consequent evil results and destruction of function. Furthermore, the constant employment of ephedrine solutions in atrophic nasal conditions is likewise ridiculous.

Of all methods in connection with cleansing the nasal passages in a scientific way, the most effective and least troublesome is the spray—the compressed air method. By means of the compressed air apparatus, the nose can be thoroughly cleansed, the crusts removed, and the proper medication applied either by means of cotton on a probe or an additional medicinal spraying by means of compressed air. Weak solutions of bichloride of mercury are often of real benefit—probably the best remedy we have for such purpose.

2. *Attention to diseased processes of the nose and throat.*—As already stated, and in few words repeated here, obstructions in the nasal cavities whether growths, tumors, polyps, deviated septa, etc., must be treated surgically. Likewise must our attention be directed toward the drainage and treatment of the sinuses. The same must be said about diseased tonsils, adenoids, gums and teeth.

3. *Drug treatment.*—I have had good results in several cases with the sulfa drugs. Spraying the nasal cavities or the antra with a five percent solution of sodium sulfathiazole by means of compressed air may result in unbelievable benefit to the patient. For internal use, especially in sinusitis, a short course of neoprontosil, under absolute control of the physician, may also prove beneficial. And, as we all know the hygiene of the nasopharyngeal tract is coextensive with that of the general human organism, the general hygienic, nutritive and medicinal management and treatment (tonic, laxative, etc.) of this trouble must be carried out by the physician in an intelligent manner.

4. *Nutrition, etc.*—The diet should be light and nutritious. Faulty metabolism should be studied and internal irritation corrected. Food allergy is at the present time given a great deal of attention. Many patients who suffer from catarrhal rhinitis of the atrophic variety give an allergic family history; they respond easily to drugs like ephedrine and adrenalin, and skin tests are usually successful in bringing out reactions—of great importance in the diagnosis of food allergy or faulty metabolism. Various hydrotherapeutic treatments have their advocates with varying degrees of benefit in connection with the general principles of hygiene. It is impossible to lay too much stress upon the hygienic phase of rhinitis or ozena; it may often be the key to its successful management.

We may mention another contributing factor which influences the slow progress in the successful treatment of ozena, namely, the various intoxicants in which some patients indulge—tobacco, snuff, alcohol, coffee, tea, overeating, aspirin and patent medicines. We must impress upon the minds of such patients the importance of avoiding these objectionable substances. To sum up, the patient must exercise a sufficient amount of common sense and discretion in matters pertaining to hygiene and health.

5. *Surgical treatment of ozena.*—The principal goal in all operative procedures seems to be the narrowing of the nasal passages in one way or another. L. E. Wolfson studied forty-six operations for ozena at a European clinic and described the procedures employed. The nasal passage is well cocaineized and the mucous

membrane of the septum, the floor and the lateral wall are infiltrated with one-half percent novocain. The mucous membrane is then incised from the middle turbinate down and across the floor to the septum. The mucoperichondrium is elevated along the floor, an instrument (chisel) inserted and a perforation made into the maxillary sinus. The tissue between the sinus and nasal portion is forced in a median position until it approaches the septum. The points of contact are then scarified in order to produce a synechia between the septum and the turbinate. The lateral nasal wall is tamponed in order to remain against the septum, and the tampons are changed every five days for four weeks.

6. *Climatic influences.*—Patients generally get along better in a moderately high and cold region where the atmosphere is bracing, pure and equable, and the temperature and humidity of the air do not vary greatly before and after nightfall. Mountainous resorts are unfit for such patients, because of the sudden chilliness and dampness which follow the setting of the sun.

Conclusions

Attention is directed to several outstanding features in connection with ozena:

1. The diagnosis of halitosis or ozena is sufficiently easy and will depend upon the exclusion of the affections causing the trouble and on the history of a pre-existing nasal catarrh.

2. The peculiar odor should be studied and distinguished from that of caries and necrosis and systemic disturbances.

3. Great attention must be paid to the nasal accessory sinuses.

4. It must be remembered that under favorable circumstances it is possible to arrest the progress of halitosis (not by mouth washes as frequently advertised on the radio, etc.), and in many cases relief can be obtained and the odor kept under control.

5. It is naturally impossible to restore the functions of an organ whose physiological properties have been utterly destroyed, and the wasted tissue must therefore be compared with the contracted liver and kidneys, in the list of incurable afflictions.

6. In cases of syphilis, especially hereditary syphilis, the prognosis is undoubtedly hopeless. Coexisting atrophy of the bones and sinuses renders the prognosis proportionally more grave.

7. One often sees cases of ozena or halitosis and thinks of them as incurable conditions, and yet there are a certain number of cases, according to some, in which care and persistent treatment will cause permanent abolition of the odor and restore the patient to comparative comfort and a sense of well being.

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 55 EAST WASHINGTON STREET

Editorials

Health and Production

The National Association of Manufacturers recently published a rather sensational booklet, *Health on the Production Front*, in which the obvious conclusion is reached that healthy workers get more work done than those who are unhealthy. While the motives of the Association may be completely selfish, nevertheless, it is well that manufacturers are showing an interest in the health and welfare of their employees. Their apparently selfish motives become altruistic. Both the workers and the manufacturers will benefit from better working conditions, higher pay for the workers and more profits for the manufacturers.

There was a time, not too many years ago, when a manufacturer who was interested in the welfare of his employees was considered radical and not quite in his right mind, but today in many countries it is recognized that bad working conditions and bad living conditions make for more illness, more accidents, more labor turnover, and less production. Health programs have reduced occupational diseases in certain industries over sixty percent. Accidents have been reduced over forty percent and absenteeism about thirty percent, while compensation costs have been reduced to twenty-five percent, and labor turnover about the same amount. These figures are mainly due to improved working conditions and undoubtedly would be even more startling if living conditions were improved in like measure. It is safe to assume that improved working conditions will automatically lead to improved living conditions, for with increased compensation, the worker should have better food and more healthful housing conditions.

It is difficult to draw a sharp line of demarcation between working and living conditions. The booklet takes up, under various headings, hygiene in the working environment, health of the individual worker, and medical services supplied. The economic aspects call for good working conditions. There are chapters on absenteeism, rehabilitation, and women in wartime industry, and an extremely important one on recreation and morale.

It is highly encouraging that a large group of industrialists represented by the National Association of Manufacturers realizes the importance of improved working conditions for labor. We have been tremendously impressed by the manner in which this problem has been handled in Russia where it has been given serious attention for many years. We are sure that industrialists have been well compensated for the interest they have shown in the welfare of the workers throughout Russia. We hope that manufacturers in all countries will realize the value of good working con-

ditions to themselves and to the workers, and that workers will permit them to do all they can in this constructive work.

The Task of Social Hygiene

The information regarding venereal disease which is found in both the professional and the lay press is of value to those who know they are infected with these diseases. Emphasis is placed on the need for examination and treatment. The ease with which cure is brought about through the use of specific drugs of the arsphenamine or sulphonamide series, always within five days, is stressed. Alas and alack! No formula ever cured any disease in five days, or fifty days, in every instance. A quick review of the most optimistic reports of the official agencies reveals the disappearance of symptoms, not cures, and the time is measured by weeks, not days, for all too many patients. Nor is relapse unknown in the follow-up of rapid treatment formulas.

At the moment the newest of the miracle drugs—penicillin—gives greatest promise in the relief of symptoms and the cure of gonorrhea and syphilis. If each and every person harboring the germs of these diseases were given a sufficient quantity of effective penicillin within the same week end or the same month, the eradication of syphilis and gonorrhea would be effected. But there is an insufficient quantity of this agent, and not enough beds and attendants to give the treatments. Hence, another avenue of approach to the problem of the venereal diseases must be found. We believe that attention should be directed to the healthy person. Health is a positive influence. The retention of health, particularly in regard to the avoidable and preventable diseases, is the theme song of the educator in social hygiene.

The venereal diseases for the most part are closer to accidents than to diseases. Education in the avoidance and prevention of accidents is not limited to the persons involved in accidents, nor is it limited to the accident wards of hospitals or first aid stations.

Education in social hygiene—or venereal diseases—is offered in treatment centers for patients with syphilis and gonorrhea. If hardheaded commercial insurance actuaries were consulted because of an ever-increasing cost ratio due to venereal disease, a plan of action would be evolved giving due consideration to the persons not infected. The chronic accident-causing automobile driver soon is removed from circulation by the process of having his license revoked. The day by day driver exposed to the hazards of the highway is given positive, persistent, repeated instruction. Accident prevention classes are held in schools and churches. Magazines carry editorials and articles on accident prevention. The radio has lectures and round table discussions. The professional movie theatre carries the

message of accident prevention. Billboards and posters tell the story. The official license plate says, drive carefully. Accident prevention clinics are held by far-sighted police officers.

Let the task of social hygiene be the avoidance of infection, and the prevention of the disease through unavoidable exposure.

Vitamin B₁ Deficiency

Among the earliest symptoms of deficiency of vitamin B₁ are loss of appetite and muscular weakness; there follows tenderness of the calf muscles, loss of reflexes and vibration-sense in the legs, and hyperesthesia followed by anesthesia advancing up the legs. The arms are affected later. The cardiovascular changes are dyspnea, tachycardia, and dilatation of the heart. There is also peripheral vasodilatation, and edema which may be mild or extreme. It is stated that dry and wet beriberi, "alcohol", gastrogenous and nutritional polyneuritis of pregnancy and of diabetes, are all due to vitamin B₁ deficiency. Proper diet may prevent the diseases due to this deficiency.

Perhaps, many are prone to underestimate the need for vitamin B₁ in the function and life of the cells. If there is a shortage of the slightest nature do not the cells suffer and disease follow, H. L. Sheehan, in his recent work on pathology in fatal cases of toxic hyperemesis seems to prove this beyond peradventure. The whole question of pregnancy, under wartime conditions in particular, requires overhauling as well as that of vitamin B₁ in the diet in connection with other states of disease or deviation from normal health. Diet in wartime needs more careful supervision in every detail than in days of peace.

Favorable Health Level in Wartime Canada

The health of the Canadian people, as measured by the mortality rates, has been maintained at a favorable level during the four years of war. This conclusion was reached by the Metropolitan Life Insurance Company from a study of the health records of the Company's Canadian policyholders.

The improvement in mortality was most marked in diseases of the younger ages; measles, scarlet fever, whooping cough and diphtheria showed a remarkable decline. The increasing control over these diseases is particularly noteworthy, inasmuch as the concentration in training camps and defense areas of large numbers of adults who had not acquired immunity in childhood could have been a cause of serious outbreaks. Similarly, diarrhea and enteritis, which have always been important causes of disease among Canadian children, have shown improvement.

The tuberculosis situation has also been favorable. Although the rate of decline was retarded during the war period, the death rate from tuberculosis was at a

new minimum, being almost one fifth below the level for the period 1934-1936. The trend of respiratory diseases has been closely watched, having in mind the influenza pandemic which occurred toward the close of the first world war, but so far there has been no cause for concern. The use of serum and chemotherapy has resulted in a considerable reduction in mortality from both pneumonia and influenza. The new sulfonamide compounds have likewise improved conditions in appendicitis and diseases connected with childbearing.

There has been in Canada, as is the case all over the world, an increase in cancer, diseases of the heart and arteries, diabetes, and accidents. The latter increase is connected with war work. The loss of life from war deaths in the proper sense fortunately was small during the first two years of the war, but in the years 1942 and 1943, however, these rates increased sharply, according to available statistics. In most other respects the health outlook for the Canadian people continues to be favorable.

Fibrositis

Fibrositis, a common affection of temperate climates, was so named by Gowers, but it has other names, depending upon the part of the body involved. E. J. Moynahan and E. S. Nicholson, writing of the condition and its treatment in the *British Medical Journal* (Jan. 17, 1942), say that it has been variously designated as muscular rheumatism, myalgia, myositis and myofascitis, and commonly as stiff neck, torticollis, rheumatic cephalalgia, brachialgia, pleurodynia, lumbago, sciatica, and so on, according to the location of the symptoms. The authors are in favor of adhering to the original name given to it by Gowers.

Many clinicians are inclined to doubt the existence of fibrositis as a clinical entity because of its indefinite etiology and pathology, and considering the vague descriptions often given of it, there is small wonder for this view. In the fourth edition of Price's *Textbook of the Practice of Medicine*, Sir William H. Willcox says that the etiology of fibrositis is in all probability identical with that of nonspecific arthritis and the source of the infection should be sought for and eradicated in the same manner as in infective arthritis. Moynahan and Nicholson, however, do not agree with Willcox. In their opinion the etiology of fibrositis is unknown, although they hold that the generally accepted causative factors are exposure to damp and inclement weather, trauma, metabolic errors, chilling and infection. Less commonly accepted causes include focal sepsis, fatigue and intestinal intoxication, according to Albee; gout and allergy, according to Buckley; and electrolytic imbalance and endocrine dysfunction, according to Gutstein.

The treatment advocated by Moynahan and Nicholson consists of injections of procaine hydrochloride into

the tender areas of the structures involved, which gives instant and often lasting relief. The technique is simple and the success of the treatment depends upon an accurate mapping out of the areas showing tenderness to pressure. If these areas are not carefully identified and infiltrated failure will result. These authors report excellent results in the treatment of more than eighty cases of fibrositis by this method, and also found that procaine hydrochloride was of value in the differential diagnosis. They conclude from their experience that procaine is definitely valuable in the diagnosis and treatment of fibrositis.

News Items

Meeting of Urologists.—Instead of the regular meeting of the Section of Genitourinary Surgery of the New York Academy of Medicine, which was scheduled to be held on Tuesday evening, March 15th, there was a joint meeting of this section with the New York Urological Society at the Yale Club on March 9th.

Medicine and the Changing World.—Dr. Reginald Fitz, lecturer on the history of medicine, Harvard University Medical School, delivered an address on "Medicine and the Changing World" at the New York Academy of Medicine, on Thursday evening, February 24th. Dr. John F. Fulton, of Yale University, presided. This was the fourth lecture in the ninth series of Lectures to the Laity of the New York Academy of Medicine.

Graduate Fortnight at the Academy.—The annual Graduate Fortnight of The New York Academy of Medicine will take place October 9-20, on the subject, "Infections and Their Treatment." Special emphasis will be placed upon the more recent chemotherapeutic agents. The Fortnight, this year as in the past, will include morning panel discussions, afternoon hospital clinics, evening lectures and pathological demonstrations. There will also be a scientific exhibit, including the more recent pharmaceuticals, and an appropriate library exhibit. For information and registration, address the Secretary, Committee on Medical Education of The New York Academy of Medicine, 2 East 103rd Street, New York 29, N.Y.

One Hundred Years of American Psychiatry.—A joint meeting of the Section of Historical and Cultural Medicine and the New York Society for Medical History was held at the New York Academy of Medicine on Thursday evening, March 2d. The program consisted of a review of the achievements of American psychiatry during the past one hundred years. Dr. Edward A. Strecker, of Philadelphia, introduced the subject. Papers were read by Dr. Adolf Meyer, of Baltimore, on the evolution of American psychiatry during the past one hundred years, and by Dr. John Whitehorn, of Baltimore, on the major therapeutic trends in psychiatry during the past one hundred years. Dr. Arthur H. Ruggles, of Providence, and Dr. A. A. Brill and Dr. Gregory Zilboorg, of New York, opened the discussion.

Personal.—Captain Stanleigh S. Tausend, Medical Corps, U. S. Army, formerly a plastic surgeon in New York, held a press conference in New York on Sunday afternoon, February 20th. He told of the important part that plastic surgery is playing in improving the morale of American soldiers.

Dr. George Baehr retired on March 1st as Chief Medical Officer of the United States Office of Civilian Defense, after two and a half years of service. He has been succeeded by Dr. W. Palmer Dearing, Assistant Chief Medical Officer since the establishment of the Medical Division of the Office of Civilian Defense.

Dr. Arild E. Hansen, professor of pediatrics at the Medical School of the University of Minnesota, has been appointed professor of pediatrics and chairman of the department of pediatrics of the University of Texas, Galveston. He was also appointed director of the Child Health Program at the university of the William Buchanan Foundation of Texarkana.

Dr. George B. Darling, president and comptroller of the W. K. Kellogg Foundation, Battle Creek, has resigned to become associated with the division of medical science of the National Research Council.

Dr. Russell L. Haden, of Cleveland, will deliver the third Edwin R. Kretschmer Memorial Lecture in Chicago, on April 28th, his subject being "The Varying Clinical Picture of Leukemia".

Dr. Evarts A. Graham, Bixby professor of surgery, Washington University School of Medicine, St. Louis, Mo., delivered the annual Arthur E. Hertzler lecture on December 1st, at the University of Kansas School of Medicine. His subject was "Bronchiogenic Carcinoma of the Lung".

Dr. Nathaniel W. Faxon, director of the Massachusetts General Hospital, Boston, was one of the speakers at the ninety-seventh anniversary of Ether Day celebration at the hospital on October 16th.

Dr. John A. Toomey, of the Division of Contagious Diseases of the Department of Health and Welfare, Cleveland, was the guest speaker at a combined meeting of the College of Physicians of Philadelphia and the Philadelphia County Medical Society, on February 2d. His subject was "Observations on the Treatment of Infantile Paralysis in the Acute Stage". This address constituted the twenty-sixth Nathan Lewis Hatfield Lecture of the College of Physicians.

Dr. Ludwig A. Emge, former executive and professor of obstetrics and gynecology, Stanford School of Medicine, San Francisco, Calif., is now serving as Senior Surgeon (Reserve), United States Public Health Service, and has been appointed Regional Medical Officer of the Ninth Civilian Defense Region, Office of Civilian Defense, effective as of January 1, 1944.

Dr. Dickinson W. Richards, Jr., associate professor of clinical medicine, Columbia University College of Physicians and Surgeons, delivered the fifth Harvey Society Lecture at the New York Academy of Medicine on February 17th. His subject was "The Circulation in Traumatic Shock in Man."

Dr. James A. Crabtree, of the United States Public Health Service, has been appointed acting chief of the health division of the United Nations Relief and Rehabilitation Administration. Dr. Crabtree was formerly executive assistant to the Surgeon General of the United States Public Health Service, and since April 1, 1943, has served as chief medical officer of the Office of Foreign Relations Administration.

Colonel Strong Honored.—A palladium medal for distinguished service in tropical medicine, with an honorarium of \$500, was presented on Monday, February 28th, to Colonel Richard Pearson Strong, Medical Corps, U. S. Army, by the American Foundation for Tropical Medicine, of which Lieutenant Colonel Thomas T. Mackie is president. The presentation was made by Rear Admiral E. R. Stitt (retired), former Surgeon General of the U. S. Navy. Dr. Strong is director of tropical medicine at the Army Medical School, Washington, D. C., and was formerly professor of tropical medicine at Harvard University Medical School. The medal is called the Richard Pearson Strong Medal and bears a profile of Dr. Strong on its face. This is the first time the award has been made, and it will be awarded periodically hereafter for outstanding service in the field of tropical medicine. The award, with the honorarium, was established as a result of a gift to the Foundation by the Winthrop Chemical Company.

Examinations in Obstetrics and Gynecology.—The American Board of Obstetrics and Gynecology announces that the general oral and pathological examinations (Part II) will be conducted in Pittsburgh on June 7th to 13th. Candidates must make written application to the secretary's office not later than April 15th. For further information and application blanks address Dr. Paul Titus, 1015 Highland Building, Pittsburgh 6, Pa.

Fellowship Award.—Dr. Evarts A. Graham, Bixby professor of surgery, Washington University School of Medicine, has been awarded the Charles Mickle Fellowship for 1943 by the Faculty of Medicine of the University of Toronto. This award was made in recognition of Dr. Graham's "discovery of a method of testing gallbladder functions by the use of certain organic compounds and the diagnosis and treatment of carcinoma of the lung."

The Kenny Treatment of Infantile Paralysis.—At a meeting of the New England Society of Physical Medicine, held in Boston on Wednesday, February 16th, the program consisted of a discussion of the technique and results of the Kenny treatment in infantile paralysis. Dr. Franklin P. Lowry, chief of the department of physical therapy of Newton (Mass.) Hospital, was chairman and presented the subject. A. Dorothy Fredrickson, a registered physical therapy technician, assistant technical director and instructor of physical therapy, Children's Hospital, Boston, recently a student of Sister Kenny at the Minneapolis Hospital, opened the discussion which was followed by a demonstration, with motion pictures, of acute cases. A general discussion followed.

Stated Meeting of the Academy of Medicine.—The scientific program presented at a stated meeting of the New York Academy of Medicine, held on Thursday evening, March 2d, with the Section of Surgery, consisted of a discussion of the recent advances in our knowledge of tumors. Dr. Francis Carter Wood, director emeritus of the Institute of Cancer Research, Columbia University, presented a general survey of recent advances made, and Dr. Harry S. N. Greene, professor of pathology, Yale University School of Medicine, read a paper on the biological differentiation of benign and malignant growths. An interesting discussion followed.

Medical Genetics.—Dr. Franz J. Kallmann, research associate in human genetics, New York State Psychiatric Institute and Hospital, read by invitation a paper on "Methods and Aims of Medical Genetics" at a meeting of the Section of Dermatology and Syphilology of the New York Academy of Medicine on Tuesday evening, March 7th. Patients referred from the Vanderbilt Clinic of the College of Physicians and Surgeons, and other hospital clinics were examined and the cases were discussed.

Greater New York Fund.—The seventh annual campaign of the Greater New York Fund on behalf of local voluntary hospitals, welfare and health agencies will open on Tuesday, April 18th. In 1943 the Fund obtained a total of \$4,333,980 in contributions and pledges. Of this sum, \$3,117,773 was free money, that is, contributions which were available for distribution among affiliated agencies, according to need. Four hundred and six voluntary hospitals, welfare and health agencies participated in the distribution of this fund, of which hospitals and related services received \$855,302, health services \$163,645, and institutions for the aged \$77,364. A balance of \$569,726 remains to be distributed.

Discussion of Plastic and Reconstructive Surgery.—At a stated meeting of the New York Academy of Medicine held Friday, February 25th, the program was presented by the American Otorhinological Society for the Advancement of Plastic and Reconstructive Surgery, Inc. The following papers were presented: Retaining a correct septolabial angle in rhinoplasty, by Dr. Jacob Daley; Nasal injury in dystocias, by Dr. Matthew S. Ersner; Muscles and cartilages of the nose from the standpoint of a typical rhinoplasty, by Dr. Bruno L. Griesman, discussed by Dr. John D. Kernan and Dr. Alfred Schattner; Surgical correction of congenital lip deformities, by Dr. Harold S. Vaughan, discussed by Dr. Fenwick Beekman and Dr. Morris S. Bender. Dr. John M. Converse of the American Hospital in Britain presented a motion picture showing reconstruction of the nose by epithelial inlay.

New Officers of the International and Spanish Speaking Association of Physicians.—The following officers have been elected to serve in 1944: President, Dr. J. M. Gershberg; first vice-president, Dr. J. A. Sacasa, of Nicaragua; second vice-president, Dr. J. B. Goodal of Canada; third vice-president, Dr. W. G. Crump; general treasurer, Dr. C. L. Glaessner; general secretary, Dr. J. I. McDonald; assistant treasurer, Dr. Garcia Lascot; assistant secretary, Dr. Wm. B. McDonough; recording secretary, Dr. E. L. Hergert; legal adviser, M. A. Strasberger, Esq.; chairman of the board of directors, Dr. George W. Henry; chairman of the scientific committee, Prof. A. H. Roffo; chairman of the advisory committee, Dr. W. T. Kennedy; directors for 1944: Dr. H. G. Bugbee; Dr. J. S. Kreshover; Dr. J. H. Heacock; Dr. H. I. Rubin; Dr. P. C. Thomas; Dr. J. Wilder; Dr. J. Keesing; Dr. C. Logotheti; Dr. J. Guttman; Dr. J. Keshin; Dr. E. Torok, and Dr. E. Horner.

The 140th meeting of this association will be held on Friday, March 24th. A symposium on the recent discoveries in medicine and surgery and their application in treatment of diseases will be presented. The guest of honor will be His Excellency, the Minister of Paraguay.

Book Reviews

Surgical Physiology

Surgical Physiology. By JOSEPH NASH, assistant professor of clinical surgery, New York University College of Medicine. Springfield, Ill. and Baltimore, Md.: Charles C. Thomas, 1942. Pp. 496. Price \$6.00.

The surgeon is often unaware of the large amount of physiological knowledge which he continually applies in his daily work. Nevertheless, physiology is a constantly acting force guiding the work of the most avowedly "practical" surgeon. Though all surgical procedures involve physiology in some degree, in certain of the newer developments of surgery physiology is actually the predominant consideration, operations being directed to the relief of functional rather than structural disorders. Surgery by its very nature inclines one to favor isolated facts of regional applicability, but the author believes that a survey of the general functional plan of each system somewhat in "outline" form, even though lacking some details, supplies the most useful background for the interpretation of clinical phenomena. Among the various systems of the body some are more "vital" than others, in the sense that suspension of their function is more rapidly fatal. By this criterion, the circulation is the "most vital" system, since death results if the circulation is suspended for a number of seconds; respiration is the "next most vital" system, since death results if respiration is suspended for a number of minutes. Some of the other systems of the body can remain out of function for days, weeks or months without fatal results. The circulation and respiration, being the two "most vital" systems, are of continued concern to the surgeon and are discussed first, even though operative procedures directed to these two systems are not exceptionally frequent. The importance of the circulatory and respiratory systems to the anesthetist is obvious. Physiological answers to many surgical problems are yet to be found. Surgeons should not lose patience with or lose interest in physiology on that account but seek to discern clearly the present outer limits of certain knowledge, however restricted they may be, and learn where the gaps are, so that they may be filled.

Industrial Medicine

The Principles and Practice of Industrial Medicine. Edited by FRED J. WAMPLER, M.D., professor of preventive and industrial medicine, Medical College of Virginia. A William Wood Book. Baltimore: The Williams and Wilkins Company, 1943. Pp. 579. Price \$6.00.

At first thought it may seem that industrial medicine is "just like every other kind of medicine". You make your diagnosis, prescribe treatment, and the patient is relieved or cured. A perusal of this book will promptly correct any such false notion; for the hazards in industry are quite different in every respect from the hazards of other civil life where machines and chemicals make up little or no part of daily contacts. Thirty-three "experts" from every field where workers are employed in great groups have written of their work. Just how many civilian physicians are obliged to care for workers without having had previous experience. Says Dr. Wampler: "Industrial medicine . . . is the practice of adult health. The physician is working

with well people trying to keep them well." It has taken 143 years to bring "the machine age" to date, but occupational diseases are as old as civilization. Health hazards in industry are numerous. Accidents will and do happen. Temperature and humidity in factories, abnormal atmospheric pressures, bad lighting, inhalation of noxious gases, the absorption of certain poisons through the skin, e.g., lead, dust diseases of the lungs, traumatic shock, burns (electrical or chemical), floor hazards due to cleaning agents (soap) and wax; all of these and many more must be known to the physician who is called upon to understand causes and effects of illness in factory workers. Chapter 24, entitled "Venereal Disease Control in Industry", seems to be off the path somewhat, and yet "social diseases" have much to do with absenteeism, and hence are important. Chapter 29, on "The Nurse in Industry", is written by a registered nurse, who rightfully stresses the point that "nursing service in industry, as elsewhere, should be under the supervision of a physician". That sentence needs to be given full weight in any "plan" for industrial first aid. Usurpation of medical authority by nurses and others has not been unknown to physicians in days gone by. There are no "pictures" in this book, but many diagrams and graphs help to elucidate the text. It is well to have a volume of this type at hand, just now especially. The authors have done an excellent job and are to be commended.

Medical Missionary in Burma

Burma Surgeon. By GORDON S. SEAGRAVE, Lieutenant Colonel, M.C., United States Army Forces in China, Burma, and India. New York: W. W. Norton and Company, Inc., 1943. Illustrated. Pp. 295. Price \$3.00.

Those who are inclined to sneer at medical missionaries as emasculated, inert religionists and nothing more, ought to read this he-man book. They will profit by it greatly. It is the story of a determined, hardy, obstinate "doctor of the old school" who did everything with almost nothing. He had to fight the weather, insects, wild animals, disease of all kinds, war wounds, the Japs, and about every adverse condition in the category of those elements which seek to chain man to earth and destroy him utterly. His medical and surgical equipment was decidedly elementary and he performed miracles in what he called "wastebasket surgery". Most of his instruments were castaways which he had picked up here and there, but in his hands they saved lives.

Seagrave was obliged to work alone with his zealous, helpful but not too rugged American wife. Later on he trained Burmese and Chinese women to assist him. They worshipped him and protected him in so far as possible against every danger. He and they built such hospitals and auxiliaries as they could with their bare hands only to be obliged to leave all behind when the Japs, invading Burma from the North, drove General Stilwell, his little army of American and Chinese, and a motley gang of natives southward into India. The story of this painful trek is a modern epic replete with more thrills than most movie writers can conjure. The book closes with this paragraph: "The last time I saw General Stilwell, I told him we all hoped that when new action developed against the Japs he would save out the meanest, nastiest task of all for us. The general turned on me like a flash with a real sparkle in his eye. 'I can certainly promise you that,' he said."

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MARCH 1944

Medicolegal Notes

Right to Additional Medical Treatment of Old Workmen's Compensation Injury

A claimant under the New York Workmen's Compensation statute was accidentally injured on July 2, 1933, in the regular course of her employment. She was awarded compensation from July 10, 1933 to August 5, 1933, the last payment being made on August 16, 1933. The case was closed September 7, 1933, at a hearing before the State Industrial Board, but a direction was made that medical treatment was to continue when necessary. No treatment was furnished prior to the application for the reopening of the case before the State Board, in which the Board entered a decision on July 9, 1941, granting an award to the claimant, and holding in effect that liability for additional medical treatment and compensation should be chargeable against the employer and carrier and not against the Special Fund under section 25-a of the Act. This decision was based on the theory that the direction to furnish medical treatment when necessary continued the case indefinitely and that the provision of section 25-a of the Act were not applicable.

The proceeding was against a hospital, the employer, and the State Insurance Fund, its insurance carrier.

The insurance carrier appealed from the award. The New York Appellate Division, Third Department, *Becker v. Marcy State Hospital*, 264 App. Div. 643, 38 N. Y. S. 2d 219, reversed the award and remitted the matter to the Board for further consideration.

More than seven years having elapsed since the date of the injury and more than three years since the last payment of compensation was made or medical treatment furnished, the Appellate Division held that if the claimant's present disability was to be attributed in any degree to the accident of 1933 the provisions of section 25-a were clearly applicable. "The case was closed beyond the seven-year period, and the decision to continue medical treatment when necessary merely stated the employer's duty in any event, i.e., to furnish treatment 'for such period as the nature of the injury or the process of recovery may require' (Workmen's Compensation Law, Sec. 13). The liability of the special fund, however, is not created by reason of the obligation on the part of the employer, but solely by virtue of the lapse of time."

The decision, though interlocutory, was held appealable. The claimant had other accidents, but the Appellate Court was not concerned with them in so far as the appealable issue here was concerned. Whether there was any factual relationship between these and the claimant's present disability was held to be for the State Board to determine.

Thrombosis Held Aggravation of Pre-existing Sclerosis

In an action on an accident and health policy requiring that "disability, independently of all other causes, shall wholly and continuously disable insured from date of accident" from performing any duties pertaining to his occupation, it was held that this provision excludes indemnity suffered in a second period following one in which there has been no complete disability.

After a fall on ice an insured under such a policy claimed disability benefits arising from luxation of right shoulder joint, traumatic neurosis, left ventricular preponderance and enlargement of the heart, the shoulder injury occurring at the time of the fall, the heart condition seventeen days afterwards.

At the trial of an action on the policy one of the plaintiff's medical witnesses, a heart specialist, testified that arteriosclerosis is a disease which everyone over forty has in varying degrees. He also testified it was possible insured's coronary thrombosis might have occurred on the 25th of February, and if so it would not be related to the accident, which occurred on the 9th of February, as the time element was too great.

Another heart specialist testified that there was some disease at the time of the fall, when plaintiff had a sclerotic condition of the coronary artery, which had existed for some time prior to the fall. Another gave his opinion that the fall would not produce coronary thrombosis without the presence of a sclerotic condition. The New York Appellate Division, *McGrail vs. Equitable Life Assur. So.*, 263 App. Div. 439, 33 N. Y. S. 2d 742, construed the evidence as establishing that coronary thrombosis could not occur without previously existing sclerosis in the coronary arteries and that the fall was an aggravation of such diseased condition. Judgment for the plaintiff was therefore reversed.

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—SWARTZ & REILLY, "Diagnosis and Treatment of Skin Diseases," p. 66



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These sound like silly questions, but really they are not. All measurement has its limitations. Nobody knows just how long an inch is, for instance. The best we can do is have an agreed-upon fiction and use that.

The full-load displacement of a battleship such as our Iowa can be stated as 52,000 tons, but this estimate may be fifty-two tons off either way. It has an accuracy of one point in a thousand. A kilogram weight (about 2.2 pounds) can be weighed to one part in a billion, however. It is the biggest and the smallest things that are the hardest to measure accurately, but we are never wholly sure even about those in between.

It would require an octillion (that's one to look up) of the pneumococcus germs to weigh as much as a whale, but the electron is smaller than the germ and its weight is known with an accuracy of only one in one hundred. The standard meter bar, or the yard, can be compared with another such bar with an accuracy of one part in fifty million, under favorable conditions, but usually one to ten million.

The standard base line used in surveying one thousand meters, is accurate only to one part in a million. An inch can be determined to within one part in a few hundred thousand but a proton, the smallest particle

of matter known, to an accuracy of only one part in ten. Even then no one can say precisely how long an inch is.

There is a lot of fiction in this matter of measurement. Both the British and the metric systems are preferable to arbitrary material standards. The metric standard is the kilogram, originally the mass of a cubic decimeter of pure distilled water at its maximum density. But a standard kilogram in Paris long acted as the material embodiment of this mass.

The yard dates from the iron yard of Edward I and it has suffered no substantial change since 1284. True, the Edward I yard no longer exists, but that of Henry VII does exist. It is one thirty-second of an inch shorter than the later standard of Elizabeth which in turn, differs from the imperial standard yard by only 0.01 inch.

The meter was originally intended to be one ten-millionth part of the earth's polar quadrant passing through Paris. But its redetermination and restandardization gradually became too formidable a job, so a material standard, a platinum-iridium bar lodged in Paris, became accepted as the meter's permanent physical embodiment.

Now there are four official copies of the Imperial Yard which are supposed to be compared regularly. The lengths of these bars vary within about 0.004 inch—but they do vary. Over long periods of time they have changed in length, but are assumed to remain stationary after about half a century. During that period one of the bars increased in length 0.000036 inch and another became 0.00002 inch shorter.

Variations of that order no doubt occur in the Paris meter bar, especially with so many Nazis around re-

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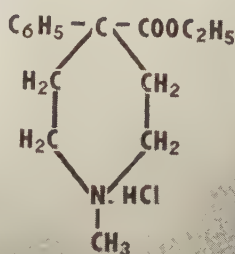
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cently. Great Britain maintains that the meter measures 39.370133 inches. By Act of Congress passed in 1866, the meter is only 39.37 inches in the United States. In reverse, the British inch is 25.399965 millimeters but ours is somehow a flat 24.400051. How long is an inch? Better ask: Whose inch?

For all practical purposes you may call the inch 25.4 millimeters and usually escape prosecution. If the Imperial yard decreased in length as much as was indicated above then, about 1882, its inch was exactly 25.4 millimeters anyway. How long is an inch? Better ask: When?

The relationship between our units of measurement is changing all the time, and not one of them was ever exact. The international ohm is defined in terms of the resistance, at 0° Centigrade, of a mercury column of specified length and mass; the international ampere in terms of the rate at which silver is deposited in a silver voltameter under prescribed conditions. All other electrical units are derived from these two.

But they are both practical units adopted because the absolute units are too difficult to use. The ohm is too large by five parts in a hundred thousand and the ampere too small by one part in a hundred thousand. The watt itself errs by three parts in a hundred thousand. No need to protest your light bill on that basis.

Time itself varies. How long is a minute? We watch the chronometer to find out; it is set by the sun which, in turn, is timed by the chronometer. For the unit of time is referable to the earth's rotation on its axis, and that must be observed by the aid of instruments used to measure time, the quartz-crystal clock giving highest precision.

When it comes to temperature, the term "thermometer" appears first to have been used by a French Jesuit, Father Leurechon, in a work published in 1624. Ferdinand II, Grand Duke of Tuscany, is said to have invented the instrument, consisting of a hermetically sealed glass tube containing a liquid. Robert Boyle proposed the use of water in the thermometer, but Isaac Newton used linseed oil. Ferdinand tried alcohol as a filler, Boyle appreciated this change and introduced such thermometers in England.

Newton, however, regarded the freezing point of water as zero on his scale. Boyle knew that more intense cold than that could be produced by mixing salt with ice. But investigators of that day did not believe that the freezing point of water was constant anyway. They thought it varied with the latitude until repeated experiments proved the contrary. Newton chose blood heat as the top point of his scale, believing it to be constant.

In our homes we usually use the thermometer scale devised by Daniel Gabriel Fahrenheit. He originally obtained his zero by thrusting the mercury filled thermometer which he invented in 1714, into a mixture of ice and sal ammoniac. If it then contained 11,124 parts of mercury, he found that, when placed in ice, this expanded to 11,156 parts, hence he set the difference, 32°, as the freezing point of water. When placed in boiling water the 11,124 parts of mercury became 11,336; the difference, 212° became Fahrenheit's boiling point of water.

Fahrenheit had much difficulty in obtaining his zero and never did get one that satisfied him. His original scale, worked out in conjunction with Roemer, read

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$7\frac{1}{2}^{\circ}$ in iced water and $22\frac{1}{2}^{\circ}$ for blood heat, the zero having been obtained in the salt-sal-ammoniac-ice mixture. To make his degrees more manageable he multiplied these values by four, obtaining 30° for the freezing point of water and 90° for blood heat. Later he changed to 32° and 96° . Today we use as fixed points, not his zero and 96° , but his final deliberate rejections, the 32° at which water freezes and the 212° at which it boils.

Reaumur, in 1730, also took the boiling point of water for the top of his scale and its freezing point for the bottom. Since he filled his thermometer with a mixture of water and alcohol that expanded just 80 parts between these two points he set the top and bottom at 80° and 0° respectively.

In 1742 Ander Celsius, a Swede, in what we call the Centigrade scale, set 100° for the boiling point and 0° for the freezing point of water, which seems very logical. Then how hot is it? Better ask: By whose thermometer?

For instance there is a thing called absolute zero. It is 273.15° below zero Centigrade and 459.6° below zero Fahrenheit. No thermometer could survive and record such temperatures. Molecular motions are supposed to cease here, hence it is impossible to produce greater cold. So far one five-thousandth of a degree above absolute zero is as cold as had been attained.

And so we may as well go back to the book of *Daniel* where, in chapter III, we read of the anger of Nebuchadnezzar: "Then was Nebuchadnezzar full of fury, and the form of his visage was changed against Shadrach, Meshach, and Abed-nego; therefore he spake, and com-

manded that they should heat the furnace seven times more than it was wont to be heated."

Previously this had been a mere "burning fiery furnace". How hot was it after Nebuchadnezzar's order was carried out? Obviously seven times hotter than hot.

GRANITE GABLES

Yale Receives Rare Collection of Chemical Compounds

A permanent collection of chemical compounds isolated from the tubercle bacillus the only such collection in existence, was presented to Yale University, on February 3d, by the National Tuberculosis Association. The collection, which is the result of seventeen years of research by Professor R. J. Anderson of Yale and his associates, was presented by Dr. Lewis J. Moorman, president of the National Tuberculosis Association, and was received by Mr. Charles Seymour, president of Yale University. The ceremony was held in the Sterling Chemistry Laboratory. Dr. William Charles White, chairman of the Committee on Medical Research of the National Tuberculosis Association, spoke on the work of his committee, which initiated the research in 1926, and had supported the work since that time. The work of Professor Anderson and his associates has had unusual value, since many of the substances isolated have opened up a whole new field in the knowledge of chemistry, and many of them are to be found only in the tubercle bacillus in minute quantities.

On the Job—OUR FEMININE "MANPOWER"



INDICATIONS

Amenorrhea, dysmenorrhea, menorrhagia, metrorrhagia, in obstetrics.

Dosage: 1-2 cap. 3-4 times daily.

Supplied: In ethical packages of 20 cap.

OFFICIALS of the War Manpower Commission assert that women today can capably "take over" any man's job, provided it is within their physical powers.

Menstrual aberrations, however, cause frequent absenteeism and loss of efficiency. For the symptomatic treatment of functional conditions, physicians find Ergoapiol (Smith) a highly efficient emmenagogue, in which the action of all the alkaloids of ergot (prepared by hydro-alcoholic extraction) is synergetically enhanced by the presence of apiol, oil of savin, and aloin.

Its sustained tonic action on the uterus provides welcome relief in many cases—by helping to induce local hyperemia and to stimulate smooth, rhythmic uterine contractions, and by serving as a potent hemostatic agent to control excessive bleeding.

May we send you a copy of the booklet "The Symptomatic Treatment of Menstrual Irregularities."

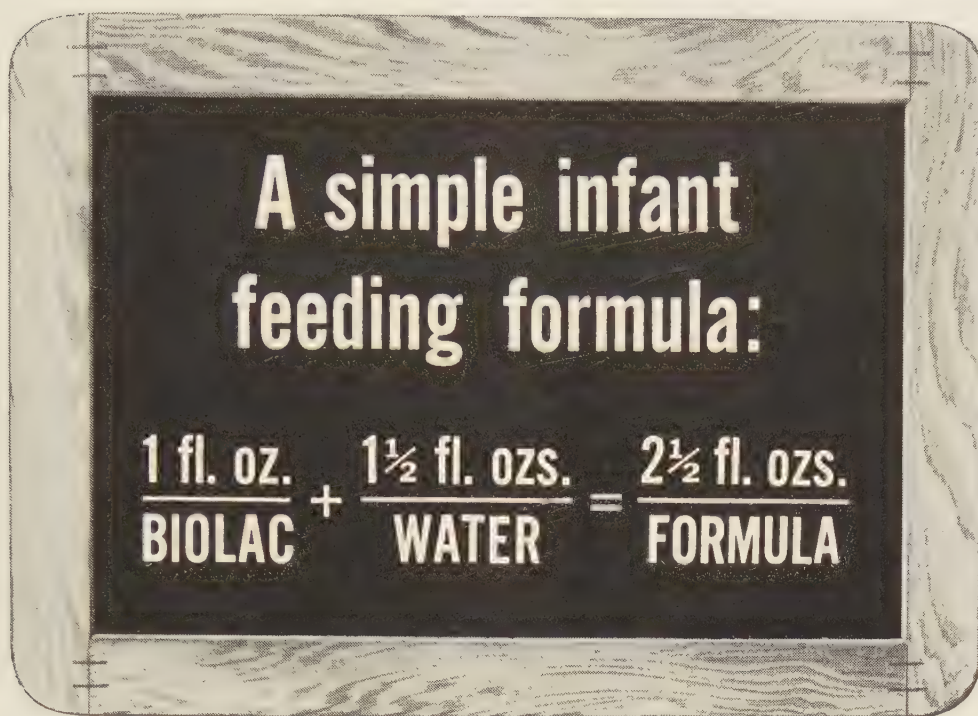
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ERGOAPIOL

THE PREFERRED UTERINE TONIC

Ethical protective mark, M. H. S., visible only when capsule is cut in half at seam.





New BIOLAC still easy to calculate!

THE CHANGED, more highly concentrated Biolac still saves you valuable time. There are no extra ingredients to calculate, because it's a *complete* infant formula*.

For standard formulas, simply dilute 1 fl. oz. of new Biolac with 1½ fl. ozs. water. Feed 2½ fl. ozs. of this formula daily for each pound of body weight.

Why Biolac has been changed

To conserve tin, Biolac is more *highly concentrated*, and is now packaged in 13 fl. oz. cans instead of the former 16 fl. oz. size.

Although the new tin is a smaller size, it contains *identically the same food values*. And one can of Biolac still makes

one full quart of standard formula. The price remains the same.



NO LACK IN
BIOLAC

Borden's *complete*
infant formula*



*Biolac is prepared from whole milk, skim milk, lactose, vitamin B₁, concentrate of vitamins A and D from cod liver oil, and ferric citrate. Evaporated, homogenized, sterilized. Vitamin C supplementation only is necessary. For detailed information, write to Borden's Prescription Products Division, 350 Madison Avenue, New York 17, N. Y.

Pepsencia with Vitamin B₁

Pepsencia, the original essence of pepsine which has been used in the treatment of gastric disorders since 1879, is now being offered in combination with Vitamin B₁ by Fairchild Brothers and Foster. The new product is described as "different in that it contains in an aromatized aqueous-alcohol-glycerin medium the gastric enzymes, coagulable nucleoproteins, minerals, and hydrochloric acid".

Each fluid ounce contains 1,000 U.S.P. units of vitamin B₁, or approximately 125 units to each teaspoonful. The dosage is one or two teaspoonfuls three times daily.

Sulfonamets "National"

A new lozenge containing sulfathiazole has been introduced by the National Drug Company, of Philadelphia. These lozenges are called Sulfonamets and are designed for use in the treatment of mouth and throat affections where sulfathiazole is indicated. Sulfonamets also contain allantoin to aid in stimulating the healing of lesions, and benzocaine for the relief of painful irritation or soreness. The use of Sulfonamets has also been suggested in various preoperative and postoperative conditions.

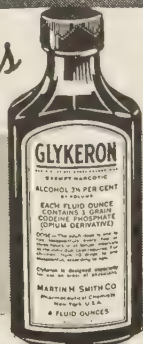
The lozenges are available in bottles of one hundred, five hundred, and one thousand.

GLYKERON . . . a double-action antitussive

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**STRONGLY
EXPECTORANT**

• It aids in breaking the vicious circle of coughs that are uselessly irritating or unproductive.

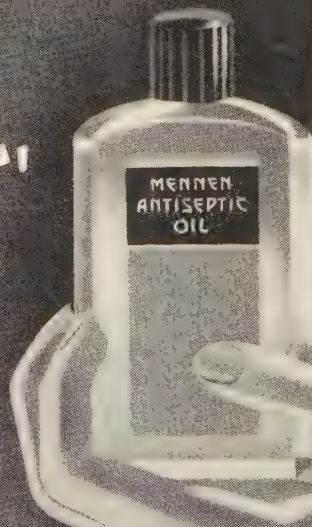
Dosage: For adults 1-2 teaspoonfuls every 2-3 hours or longer; children in proportion.

Supplied: In 4 oz., 16 oz., and half-gallon bottles.

May we send you valuable brochure?

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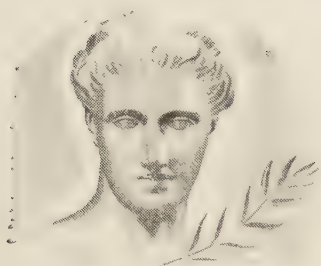
**TO SAVE
YOUR TIME,
DOCTOR**



By helping to keep the infant free of many rashes and skin infections, Mennen Antiseptic Oil may often save avoidable calls. It is the only widely used baby oil that does all these three things:

- lubricates skin
 - gives antiseptic protection
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- Mildest, safest on infants' skin

MENNEN ANTISEPTIC OIL



NEW LIGHT ON AN AGE-OLD PROBLEM

New manifold-acting preparation—ALLANTOMIDE VAGINAL CREAM—contributes to effective vaginal therapy—aids in the control of infection and tends to stimulate healing of certain vaginal lesions.

AN increased incidence of vaginal infection and excellent results recorded with Allantomide Ointment "National" in combating infections in surface wounds spurred the Research Laboratories of The National Drug Company to develop an effective preparation for the control and treatment of several vaginal conditions.

ALLANTOMIDE VAGINAL CREAM is the result of this research, a combination of 15% sulfanilamide, 2% allantoin with lactose in a special hydrophilic base buffered with lactic acid to a pH of 4.5. Much clinical evidence supports the value of this combination. Since its introduction, ALLANTOMIDE VAGINAL CREAM has been indicated as an aid in the treatment of gonorrheal cervicitis and vaginitis, vaginal and vulval condylomata, chancroid, acute *Trichomonas vaginalis* vaginitis and other lesions of the exocervix, vagina and vulva. In lesions such as condyloma acuminatum, granuloma inguinale and lymphogranuloma venereum, ALLANTOMIDE VAGINAL CREAM aids in reducing non-specific secondary infections.



ALLANTOMIDE VAGINAL CREAM is available in 4 oz. tubes, with or without an applicator. The cream is odorless and stainless. Two drams administered twice daily are usually sufficient for effective anointment without producing leakage. Additional information will be gladly supplied. Write The National Drug Company, Dept. J, Philadelphia 44, Pennsylvania.



BIOLOGICALS, BIOCHEMICALS, PHARMACEUTICALS FOR THE MEDICAL PROFESSION

For the
*Underactive
Thyroid*

Glythoid Pills
(Glycerin Extract Thyroid—Schieffelin)

Satisfactory results are generally produced by administration of Glythoid Pills in hypothyroidism—mild or severe.

Glythoid Pills are well tolerated by many patients who react unfavorably to desiccated thyroid.

Dose: 5 min. pill, 2 to 4 times daily.
Bottle of 50 pills.

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Medical Aid for United Nations

The Medical and Surgical Relief Committee of America announces the donation, during 1943, of medical, surgical and dental equipment valued at more than \$113,000 to the U. S. Navy, the U. S. Coast Guard, the armed forces of our Allies and to needy welfare groups throughout the free world. This brings the total value of shipments up to \$605,710.75, according to a statement issued by the treasurer of the committee.

The bulk of the committee's domestic shipments, representing nearly forty percent of the total, was earmarked for units of the Navy and the War Shipping Administration. Since March 1943, to the end of December, 910 emergency medical kits were furnished by the committee to landing, patrolling and subhunting craft of the Navy. These kits, which were specially designed by committee doctors for small doctorless vessels, are equipped to give professional on-the-spot treatment to the ill or injured until the ship can reach a base hospital. More than one hundred emergency medical field sets and complete operating rolls were distributed to larger ships of the Navy, to foreign representatives of the War Shipping Administration and to the British West Indies for the care of shipwrecked seamen and other casualties in the Caribbean area. Cruisers, destroyers, and battleships used this equipment to set up mobile battle dressing stations at strategic posts on the ships' upper decks. The set provides not only complete emergency medical care during combat, and equip an auxiliary operating table, but they serve as reserve supplies should the ship's hospital quarters be damaged.

Many medical missionaries, before leaving for interior parts of China, India and Africa, visit the head-



DIATHERMY TUBES by UNITED



• Available for replacements in most standard makes of machines, under provisions of War Production Board Order No. L-265.

Since 1936, UNITED Tubes have been standard initial equipment in most of the leading makes of short wave diathermy machines.

Write for descriptive folder and tube replacement guide, for correct selection of type required for your machine. (There are 12 different types.)

Available at your surgical supply house or radio parts distributors.



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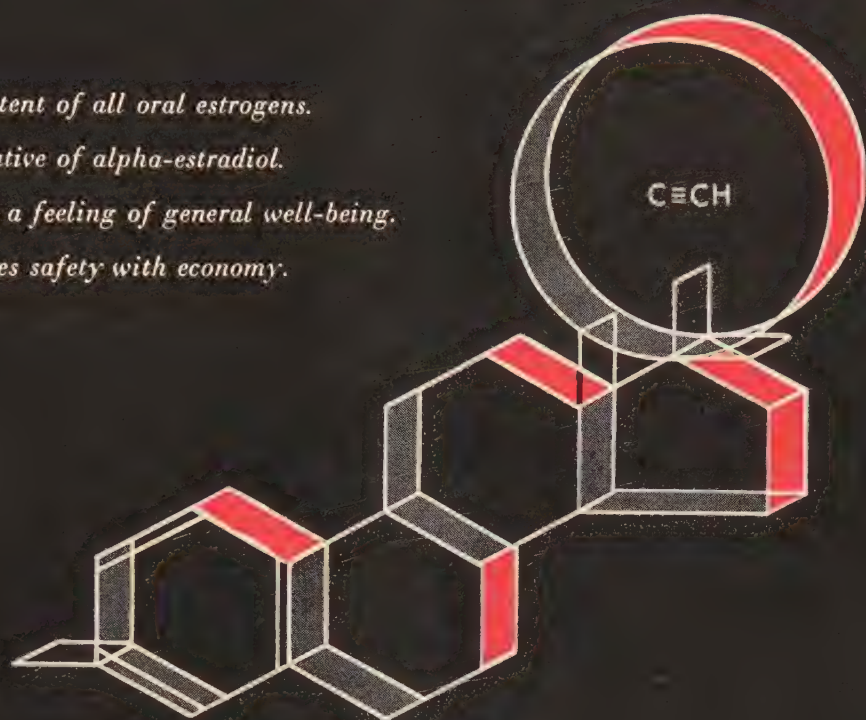
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Combines safety with economy.



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ESTINYL AVAILABLE AS 0.05 AND 0.02 MG. TABLETS IN BOTTLES OF 30, 60 AND 250.

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ENDOTHYRIN

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Lower toxicity
(better tolerated--less heart-stimulating effects)

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NEW YORK CHICAGO DALLAS

quarters of the Committee where they select bandages, antiseptics, household medicines, and surgical instruments, including always a dental extractor and an obstetrical forceps. In this manner, the Committee has supported the medical work of various missions and the Christian Council for Overseas Work. During 1943, three shipments of vitamins were presented to the American Hadassah for distribution to the undernourished children of Palestine.

However, the Fighting French in North Africa, Tahiti and Syria, the Royal Norwegians, the new National Health Board Administration of Chungking, China, and Soviet Russia requested and received the greater part of the Committee's foreign donations in the past year. Crates of basic operating instrument sets, special sets for eye and plastic surgery, mobile medical kits for field ambulances together with quantities of sulfa drugs, vitamins, bandages and other supplies were distributed for the Committee by French Red Cross in Algiers to hard-pressed military hospitals and field stations in North Africa. Shipments to the Royal Norwegians included an assortment of all types of medical, surgical and dental equipment, from cough-mixtures to sulfa drugs, from safety-pins to operating kits, plus bandages, vitamins, antiseptics, etc. Requests from China were largely for dental supplies and vitamins. The burrs, extractors, syringes, files, and old-fashioned foot-drills were distributed to needy dental clinics but are also used to help train Chinese student-dentists.

Shortage of Hospital Supplies in Belgium

Information from the National War Fund through its member agency, Belgian War Relief Society, states that in occupied Belgium conditions are such that doctors and surgeons in hospitals must wash their hands with a soap substitute made of clay, ordinary soap being so scarce. In the black market, however, soap sells for sixty francs a kilo, about eighty-seven cents a pound.

Bandages and dressings, washed and sterilized, have to be used over and over again since the occupation authorities have commandeered all available supplies. Such common pharmaceuticals as iodine and vasoline are unobtainable, and certain surgical instruments and syringes have become very scarce.

Diathermy Tubes

An attractively illustrated six-page folder describing United radiotherapy or short wave diathermy tubes has been prepared by the United Electronics Company, 42 Spring Street, Newark 2, N. J., and will be sent to physicians on request.

The United diathermy tubes are specifically designed for heavy duty use in short wave machines and embody structural improvements which add to the safety, economy and effectiveness of diathermy service. The tubes illustrated are mechanically and electrically interchangeable with older types of tubes, and a replacement guide is given to aid in selecting the correct tubes. The electrical characteristics and performance ratings of these United tubes are presented in tabular form and a partial list of standard diathermy machines, with correct tube complements, is also included.

Physicians who use short wave diathermy in their practice will find this folder of interest and value.



Just as curves serve to temper a steep incline, the mechanism by which a hypotensive agent acts must assure safe, gradual descent of blood pressure. Vasodilatation as fleeting as that produced by the nitrites has proved inadequate.

Therefore, an increasing number of physicians are prescribing HEPVISC to relieve the dangerous symptoms of hypertension. The clinical literature is replete with reports supporting the gradual, sustained hypotensive action of HEPVISC. Moreover, in well over 80% of cases HEPVISC also relieves the associated symptoms of headache, dizziness and tinnitus.

HEPVISC's distinguished formula combines synergistically 20 mg. Viscum album, 60 mg. desiccated hepatic substance and 60 mg. insulin-free pancreatic substance.

The dose of HEPVISC is 3 to 6 tablets daily in divided doses before meals. Medication should continue for two to three weeks with an interval of one week between courses. Bottles of 50, 500 and 1000 tablets.

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ANEMIAS
 A new Therapeutic
Brief discusses the wide
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among patients of all
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*Consult Your Telephone Directory
For Office Nearest You.*
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Location of Pain in Appendicitis

Craig analyzed two hundred consecutive cases of acute appendicitis to find out how often pain or tenderness was referred to the classic site in the right iliac fossa (*Med. Jour. Australia*, Nov. 27, 1943). He found that the cases fell into three main groups. In 48.5 percent, pain commenced in the midline and in from two to thirty hours moved to the right iliac region. In the second group, pain started in the right iliac region and remained there (thirty-three percent). In 18.5 percent, pain commenced at the midline and remained there; four fifths of this group later showed some signs in the right iliac region, but in the remaining one fifth no definite localizing signs developed. Pain in the back was noted in only two cases, associated with pain in the right iliac fossa.

Vomiting or nausea was usually present, though never so severe as to suggest an appendicitis of the obstructive type. In seven out of the two hundred cases there were no localizing signs in the right iliac fossa, only vague, indefinite tenderness over the lower part of the abdomen. In six of these seven cases, pain remained at the midline. Sixty-three percent showed elevation of temperature on admission to hospital; sixty percent showed rise in pulse rate; fifty-three and a half percent had "abdominal" breath, and sixty percent had "dirty" tongues.

From his investigation, Craig considers "acute pain in the midline of the abdomen, particularly when occurring in a young person, is due to acute appendicitis unless it can be proved otherwise".

Zephiran Chloride Concentrate

Winthrop Chemical Company announces that the new disinfectant, Zephiran Chloride Aqueous Concentrate 12.8 percent, is now available and special literature, including a cost chart, may be obtained which explains how pharmacists can prepare aqueous dilutions at low cost.

Zephiran Chloride Aqueous Solution 1:100 is recommended for use in surgical and gynecological procedures, for disinfection of skin and mucous membranes, preparation of the surgical field, and as a first aid prophylactic in traumatic injuries, lacerations, etc. For widely denuded tissue surfaces and sensitive skin or mucous membranes weaker dilutions are suggested.

Zephiran Chloride Concentrate 12.8 percent is supplied in bottles of four fluid ounces (boxes of twelve) and one gallon.

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Wherever silver is indicated

You and your patients will equally appreciate the cleanliness and effectiveness of Collene, the original clean and stable silver solution—Always ready for use.

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New Treatment for Secondary Amenorrhea

Roche-Organon, Inc., hormone manufacturers of Nutley, N. J., announce a new simplified treatment for secondary amenorrhea of less than two years' duration. This new treatment was devised by Zondek who found that only two injections on two successive days were necessary, while the method formerly required thirteen injections over a period of twenty-five days. Zondek also demonstrated that complete proliferation of the uterine mucosa was unnecessary and bleeding might be provoked by the corpus luteum hormone. For the convenience of the physician Roche-Organon is marketing a special combination package for this Zondek treatment. It consists of two ampoules of dimenfonon benzoate (alpha-estradiol benzoate), each containing 2.5 mg., and two ampoules of progestin (progesterone), each containing 12.5 mg. The advantages of this new, simplified method are of considerable clinical importance, for not only is the duration of treatment reduced from twenty-five to two days, and only two injections are required, but the use of large doses of estrogens, which have an inhibitory influence on the anterior pituitary, is obviated. Before instituting this new treatment, the physician should rule out nonendocrine etiological factors, such as constitutional disorders and local pelvic lesions. The absence of pregnancy should also be established before treatment is initiated, even though the use of Zondek's method will not affect gestation.

When secondary amenorrhea has lasted for more than two years, only five days are required for treatment in most cases; and a daily dose of 10 mg. of progesterone alone, administered intramuscularly on five successive days, usually gives satisfactory results. For this treatment Progestin 'Roche-Organon' (progesterone) is available in 10-mg. ampoules, in boxes of three, six and fifty.

Wounds Provide Clues to Secret Weapons

Military doctors are advised by Dr. J. F. Fulton, professor of physiology at Yale University Medical School, to watch for new types of wounds which may give the first clues to Axis secret weapons. Wounds correlate with the weapons that cause them, he is quoted as saying (*N. Y. State Jour. Med.*, Nov. 15, 1943). New types of burns, tearing effects, injury from gas or alkaloid poisons, all betray their causative factors, the prompt recognition of which will lead quickly to the formulation of protective measures.

EFFECTIVE TREATMENT OF YOUR
NEXT CASE OF EPIDERMATOPHYTOSIS

CASTADERM

LANNETT

A liquid dermatological preparation containing
resorcin, boric acid, acetone and carbolfuch sine.

Ethically advertised to the profession only

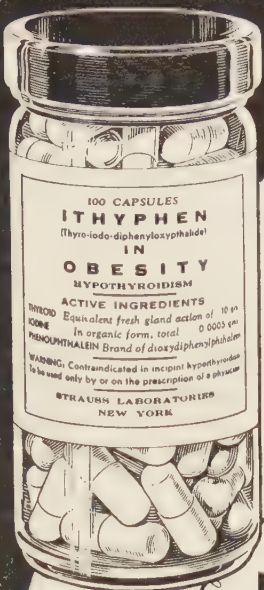
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Send for professional sample

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In addition to our own clinical tests, over 15 years of successful use by the medical profession prove that in hypothyroidism, ITHYPHEN is a highly effectual reducing medication without undue toxic by-effects.

Samples and literature on request. Kindly enclose your professional card or letterhead.

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ITHYPHEN
in OBESITY
ADVERTISED ONLY
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COMPLETE PROTECTION

Against Gonorrhea and Syphilis

Sanitubes, the original Navy prophylactic tubes, are not sold in Army post exchanges.

Every drug store a prophylactic station!

A single tube only—half the ointment inside the urethra to prevent gonorrhea, half applied outside to protect against syphilis.

No "two tubes" to get confused, no color to stain fingers and clothing, no odor, no irritation.

As to comparative efficiency, let us send you laboratory findings.

THE SANITUBE CO., NEWPORT, R. I.

Poliomyelitis in Malta

An epidemic of poliomyelitis which broke out in Malta, just after the relief of the island, is described by Seddon in the *British Medical Journal* (Nov. 27, 1943). Overcrowding and poor nutrition had been extreme, yet the epidemic spread to a nearby island where condi-

tions were quite normal. Children up to the age of five years were affected almost exclusively among civilians. The epidemic spread to British and Dominion troops, but the Maltese troops were unaffected.

Considerable difficulty was encountered owing to strain on the hospitals and the fatalistic attitude of the parents, making it necessary to search out the victims. Scabies complicated massage. Fortunately ample material for splints was available. Scoliosis was the chief danger. About one third of the children made a good recovery in four months. Twenty-five to thirty-three percent suffered serious crippling. Mortality in the four hundred child cases from poliomyelitis alone was 3.52 percent; with other conditions, 2.77 percent.

Overcrowding did not seem to be a factor in the spread of the disease; neither did poverty, nor poor nutrition. An apparent immunity up to three months of age was noted, with increase in susceptibility to nine months, and gradually diminishing incidence to five years. The most constant clinical feature was periodic flushing. Rigidity of the spine was not observed. Abdominal colic with uneasy micturition was frequent.



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effectively treated mechanically

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RECTAL DILATORS

Rectal muscle spasticity may be caused by emotional conditioning due to improper training or prudish resistance to the inclination for bowel relief. Mechanical stimulation of these too tight sphincter muscles often restores normal circulation and proper elimination.

Young's Rectal Dilators are not advertised to the laity. Sold on physician prescription only. Set of four \$3.75. At ethical drug stores or from your regular dealer. Illustrated literature sent on request.

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ETHICAL — RELIABLE — SCIENTIFIC

Disorders of the Nervous System

BEAUTIFUL — QUIET — HOMELIKE — WRITE FOR BOOKLET

FREDERICK W. SEWARD, M.D., Director

FREDERICK T. SEWARD, M.D., Resident Physician

CLARENCE A. POTTER, M.D., Resident Physician

Infection from Wild Fig Sap

The occurrence of severe dermatitis and conjunctivitis among men clearing and burning around an old bomb crater area in North Australia at first threw suspicion on possible blistering chemicals from the bomb craters (*Led. Jour. Australia*, June 26, 1943). It was soon established, however, that the irritating cause was the sap of the wild fig. Vesiculation appeared within twelve hours of gentle test rubbing with the sap on the moistened forearm.

Nasal symptoms varied from mild tickling in the nose to severe irritation of nose and throat with copious mucous secretions. In most cases nasal irritation soon disappeared. Skin lesions mounted from a blotchy erythema to a papulovesicular eruption. The forehead, the cubital fossæ and the genitals were the sites most affected. The eyes showed mild to intense conjunctivitis, so severe in one case that large areas of each cornea were denuded of epithelium. Chemosi and edema of the lids and photophobia were also present. The skin lesions began desquamating in about a week. Zinc cream helped to heal the raw areas. Eye

lesions when severe stained with fluorescein. Recovery took about a week with no apparent damage to vision, except in one severe case of ulceration of the cornea.

No infecting organisms were disclosed on cultural examination. A precautionary warning against the sap of the wild fig is now being generally issued to working parties in the area.

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Requires Analgesia-Bacteriostasis, and
Dehydration of the Tissues.

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A RELIABLE MUCOUS CLEANSER

As a rapid emulsifier and solvent of discharges from mucous membranes, MU-COL is prescribed frequently by many physicians who find it uniform, reliable and exceptionally acceptable to patients because of its soothing and cooling properties. Long established as a balanced, saline-alkaline bacteriostatic free from corrosive or toxic ingredients. A powder, quickly soluble. Samples, though limited by war, are available to doctors on request.

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IS A UNIQUE REMEDY OF UNIQUE MERIT

Cuts short the period of illness and relieves the distressing spasmodic cough. Also valuable in other Persistent Coughs and in Bronchitis and Bronchial Asthma. In four-ounce original bottles. A teaspoonful every 3 to 4 hours.

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SULFONAMIDES

for every indication

the newest...

SULFAMERAZINE

Requires smaller or less frequent doses than sulfadiazine... Equally effective... No more toxic.

Supplied in 0.25-Gm. and 0.5-Gm. tablets (bottles of 100, 500 and 1000), as Chemical Reagent (1-Gm. vial), and as Sodium Sulfamerazine Sterilized Powder for intravenous solutions (5-Gm. vial).

for enteric bacteriostasis...

'SULFASUXIDINE'

SUCCINYLSULFATHIAZOLE

Highly effective against bacterial dysentery and as a prophylactic in intestinal surgery... Less than 5 per cent absorbed.

Supplied for oral use only as 0.5-Gm. tablets (bottles of 100, 500 and 1000) and as powder (1/4-lb. and 1-lb. packages).

as well as...

Sulfadiazine... 0.5-Gm. tablets (bottles of 100 and 1000), Chemical Reagent (1-Gm. vial), Sodium Sulfadiazine Sterilized Powder (5-Gm. vial) for intravenous solutions.

Sulfathiazole... 0.25-Gm. tablets (bottles of 50, 100, 500 and 1000).

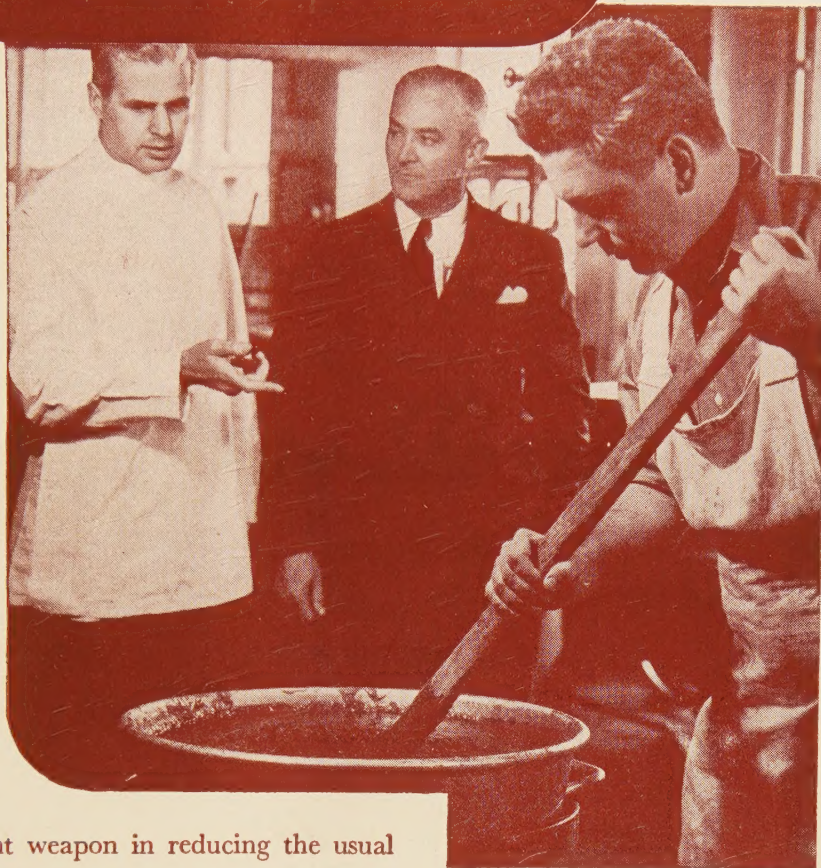
Sulfapyridine... 0.5-Gm. tablets (bottles of 50, 100, 500 and 1000).

Sulfanilamide... 5-grain and 7 1/2-grain tablets (bottles of 25, 100, 500 and 1000).

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Calmitol is an important weapon in reducing the usual lengthy period of disability associated with industrial dermatoses. It exerts a positive, specific anti-pruritic influence which eliminates the desire to scratch and thus aids in reducing spread of the lesion. Hence it makes possible earlier return to work, since the distraction of itching is no longer a problem. Calmitol keeps the patient comfortable while immunity to the dermatogen develops, and while other indicated therapy produces resolution. Regardless of the offending chemical or the nature of the lesion produced, Calmitol will be found dependably efficacious.

Thos. Leeming & Co. Inc.

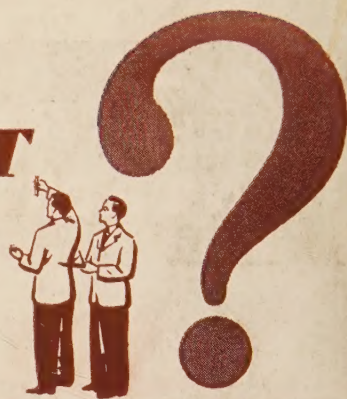
155 E. 44th Street

New York 17, N. Y.

CALMITOL
THE DEPENDABLE ANTI-PRURITIC

The anti-pruritic properties of Calmitol are due to the valuable pharmacodynamic influence of its ingredients: camphorated chloral, menthol, and hyoscyamine oleate, in an alcohol-chloroform-ether vehicle. A three-fold action is exerted: (1) Sensory impulses are blocked at the afferent nerve endings and cutaneous receptor organs; (2) local active hyperemia encourages resolution of the underlying process; (3) bacteriostasis aids in preventing spread. Calmitol Ointment is thoroughly bland and may be applied safely to the tender skin of infants. * * * Professional samples available on request.

What Are
THE MOST POTENT
Androgenic Substances



Pure synthetic testosterone propionate
PERANDREN*
most effective androgen for parenteral injection



Orally active form of methyltestosterone
METANDREN* TABLETS
most potent androgen for ingestion therapy.



Methyltestosterone in linguets for slow absorption
METANDREN LINGUETS*
most potent androgen for sublingual use.



*Trade Marks Reg. U. S. Patent Office.
"Metandren Linguets" identifies the product as methyltestosterone of Ciba's manufacture, for sublingual administration.

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TOMORROW'S MEDICINES FROM TODAY'S RESEARCH